THE URANIUM MARKET:
WHITHER GOEST THE YELLOWCAKE ROAD

PRESENTED AT:

Atomic Industrial Forum Fuel Meeting

March 22, 1982
New York City

by

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At the risk of stating the obvious, it must be observed that the long-term health and development of the uranium business depend on the long-term health and development of nuclear power as a source of electric generation. I make this point because there has been a tendency by many of us to pay close attention to the trees and lose sight of the forest. We focused our attention on existing uranium supply agreements. We talked about uranium demand generated by enrichment contracts, by conversion contracts and by fabrication contracts. More generally, we focused on a high uranium demand associated with a thriving nuclear industry. We believed our own optimistic forecasts, because we wanted them to be true.

We ignored the reality. Utilities were getting into financial trouble; load growth leveled out; reserve margins increased; regulatory constraints and nuclear opposition extended completion dates and nuclear plants were being canceled. We ignored all this because, as the true believers in nuclear power, we just *knew* that nuclear was the only way that made sense; we were confident that the aforementioned problems were but temporary anomalies that would soon pass as the non-believers saw the true light.

So, where are we now? We have a worldwide uranium industry that expanded vigorously to meet a market characterized by a continuing erosion of future demand. Somewhere alone the line we took our eyes off the target.

There is an imbalance between uranium production and uranium consumption. It is no secret that more uranium is being produced than is being consumed in reactors. It is true today, both for the United States and the world at large. On a worldwide basis, it will still be true in 1990. Slide Number 1 shows the world picture. Please note that we are comparing production and consumption, and we define consumption as that uranium which will be used to fabricate fuel for loading and reloading reactors. Consumption is different than demand. Demand represents the buyers' perceptions of their needs and will thus differ from consumption to the extent of those perceptions and to the extent that the buyers wish to increase or liquidate inventory. I will elaborate on this situation later.

As a natural consequence of this oversupply situation, inventories will continue to grow on a worldwide basis. Slide Number 2 compares production, consumption and inventory. Total inventories will rise from more than 400 million pounds U_3O_8 in 1982 to more than 630 million pounds U_3O_8 by 1990. These figures exclude the material owned by US DOE and other national, non-utility stockpiles.

Other Significant Factors in the Current Market

1. US production is being cut back. These cutbacks began in 1980 and continue to the present. They take a number of forms:

a. Some producers have shut down completely.

b. Some have reduced production to the level of existing contract commitments.

c. Potential new producers have deferred or canceled their plans for new facilities.

2. Non-US production is expanding; reductions in US production are being offset by new and prospective new production, primarily from Canada and Australia. Of course, even the pace of this expansion is markedly slower than had been anticipated a few years ago.

3. Non-US sellers are penetrating the US market. This displacement of higher cost US production by lower cost non-US material is a fact of life, albeit an unpleasant one for some of our US friends.

4. A number of producers have become buyers; to meet existing delivery commitments, some US producers (we can now count eleven) have found it more economical to purchase uranium than to produce it.

5. Utilities are selling uranium inventory; utilities, primarily, but not exclusively US utilities, have been active sellers of inventory during the past two years. These sales are usually for spot and near-term delivery and total more than 5 million pounds from 1980 to date.

6. Prices are down. This is a delicate area, and let me be precise in what I say. Uranium prices, as measured by Nuexco's Exchange Value, are well down from the levels reported in the late 1970s. Nuexco's Transaction Value and Nukem's quote show parallel declines — Slide Number 3 compares these three indicators from 1976 to date.

Where do we go from here? Given existing conditions and based on the aggregate data discussed earlier, the answer would appear to be "Not very far and not very fast." It's difficult to build a case for a healthy industry in such an environment. However, things are not always what they appear, and uncritical acceptance of aggregate data can be misleading. These aggregates tend to mask some unusual situations.

First among these is the breakdown of data between the United States and the rest of the world. While an earlier slide showed supply greater than consumption in every year through 1990, one sees quite a different picture when looking at the US in isolation. In Slide Number 4, we see US supply decreasing and US consumption increasing with the crossover occurring in 1983. The deficit will be made up by imports and inventory liquidation.

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Moving next to the inventory situation in the United States, we find that inventory is characterized by maldistribution. Slide Number 5 shows the extremes of this maldistribution. Based on conversations with utilities and numerous surveys, the desired average uranium inventory for US utilities is about one and one half years of forward needs. However, averages and desires tell us little. A number of utilities purposefully pursue zero-inventory policies. One such utility expressed it this way:

"Why in the world should I bother to invest capital in uranium inventory when those other utilities are carrying it for me, and DOE has 130 million pounds?"

It should also be noted that the largest inventory accumulations are accidental — the result of delayed or canceled reactors or uranium supply agreements that have not been amended.

Again, using US data, I would draw your attention to some other factors. Slide Number 6 compares apparent future uranium consumption with uranium demand as perceived by the utilities themselves. Consumption is an empirically derived figure, while the demand is determined by looking at the utilities on an individual basis. Due to the natural conservatism of utility buyers and not surprisingly, demand is consistently higher than consumption. Too much, too soon may not be desirable, but too late or too little is totally unacceptable. Until reactors are officially delayed or canceled, utilities must, to be safe, plan for fuel supply on the most optimistic schedule even though such a schedule may be totally unrealistic. Most of you in this room have experience with the "official" versus "real world" situation.

Slide Number 7 is the same as Slide Number 6, but we have added existing delivery commitments. The dashed line indicates the non-US portion of such commitments.

The non-US component of US supply was added as an afterthought to demonstrate the current penetration of the US market by foreign sellers. This data is current and includes some sales not yet publicly announced. Please note that the data refers only to contracts between US utilities and non-US sellers. However, it should also be noted that additional foreign origin uranium will be delivered to US utilities by US suppliers as a consequence of litigation settlements and offshore purchases. Based on current arrangements such deliveries could total as much as an additional 35 million pounds U_3O_8 during the period 1982-1990.

The more important point of this slide is to attempt to define unfilled requirements of US utilities. By definition, unfilled requirements will be met by new purchases or inventory drawdowns. The minimum size of those unfilled requirements is defined by the difference between line C (existing commitments) and line B (forecast consumption). The maximum size is defined by the difference between lines C and A. As noted previously, we believe that actual usage and needs will approximate line B, as opposed to line A. Thus, unfilled requirements are likely to be less than suggested by reference to line A.

However, even this slide does not provide an adequate picture, for it presents the data on a gross basis which masks individual situations.

The fact that aggregate supply exceeds demand does not mean, and I repeat, *does not mean*, that there is no unfilled demand. It could and, in fact, does mean that the uranium is being supplied to people who don't need it. The true size of unfilled demand can only be developed through a company-by-company analysis.

Let me explain what I mean with a grossly simplified example. Consider the following. Total supply equals 40 million pounds. Utility demand also totals 40 million pounds, consisting of four utilities, each of which has a demand of 10 million pounds. Thus, supply and demand are in balance. Right? Wrong. Two of the utilities have purchased 10 million pounds each. The third utility has purchased 20 million pounds. The fourth has purchased nothing and still needs 10 million pounds. Thus, while supply and demand are in balance in aggregate, there is still unfilled demand of 10 million pounds.

Slide Number 8 shows the results of such a company-by-company analysis. You will note that unfilled requirements are larger and appear sooner than in the previous slide.

The conclusion I wish to draw from this brief exercise with US data is that things are never as straightforward or as simple as they may at first appear. In fact, there is considerable demand in the United States. There is also unfilled demand overseas, though proportionately less due to the propensity of non-US buyers to carry larger inventories and contract further into the future.

Given all the foregoing, what can we expect to see during the remainder of this year and the foreseeable future?

Utilities

US utilities will be entering the market to purchase intermediate and longer term needs. Since late 1981, a number of public invitations have appeared and more are likely. By mid-year, we would expect the total to exceed ten. It is also interesting to note that some US utilities have elected to forego the public invitation route and have, instead, opted to use the negotiated approach. We would not be surprised to see increased use of the negotiated approach, for the results appear at least equal and probably superior, to those achieved through competitive invitations.

Most US utilities continue to resist entering longer term contracts which contain pricing provisions that can

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operate in such a manner so as to cause them to pay more than spot prices for any considerable period of time.

This provides problems for higher cost producers who cannot afford the risk of guaranteeing delivery at spot prices. As a consequence, a number of recent contracts contaiin so-called "walk-away" provisions designed to protect buyer or seller depending on whether spot prices are too high or too low. We anticipate more such contracting.

US utilities will buy increasing quantities from non-US producers, and non-US supply could account for as much as sixty percent of deliveries to US utilities by 1990. Despite expressed concern about the viability of the US uranium production industry, US utilities are, in the main, extremely price sensitive. The entire public utility fabric is aimed at providing service at the lowest possible cost to the consumer. It is difficult to visualize a general consensus to pay substantially more for US origin uranium. However, the decision is unlikely to be that clear cut, due to differing times of market entry, current availability, size and other factors. Furthermore, as you know, some few US utilities will insist that all or some major portion of this supply be of US origin. So, to paraphrase Mark Twain, "Reports of the death of the US uranium industry are greatly exaggerated."

Utility inventory sales will continue. While US utilities will be particularly prominent, they will have competition from non-US inventory sellers. High interest rates and faltering reactor programs are the prime motivators of such sales. It is important to recognize that once a user decides to liquidate inventory, price becomes a secondary consideration. In this regard, we must take note of another factor. As spot prices fell during 1980 and 1981, various utilities withdrew as sellers. It can be anticipated, therefore, that new utility selling pressure would be triggered by any price strengthening.

Another aspect of such inventory sales should be especially noted. Increasing quantities of inventory will be in the form of natural and enriched UF_6. Transactions will become increasingly complex, requiring, in many cases, de-enrichment and de-conversion into component parts prior to sale. Excesses of conversion and enrichment services parallel the market overhang that exists in uranium. The development of discount markets in conversion and enrichment services attest to this condition.

US Producers

US producers find themselves in a difficult position. Most US production costs are now in excess of current spot price levels. As existing contracts run out, US sellers are finding it difficult to offer terms that make economic sense for them and are, at the same time, acceptable to US utilities. US producers have reacted to this situation differently, but three general patterns have emerged.

1. Close down production and buy in scheduled deliveries.

2. Cut back production to the level of existing delivery commitments.

3. Contract forward on a basis that allows a walk-away if prices don't recover.

The choice of strategy depends on two factors: first, production costs, and second, the level of prices being received under existing contracts.

The buying-in strategy has two benefits. On the one hand, it restricts supply and, on the other, because most such buy-in purchases are made from utilities inventory sellers, it assists in redistributing the utility inventory.

I would offer one final observation in this regard. Uranium users worldwide prize diversity of supply. Ignoring for the moment the attitude of US utilities and the US government, the *complete* demise of the US uranium industry would be a matter of concern to *non-US* buyers, for they would be thrust into competition with US buyers for available suppliers from other world sources. The Australian experience has shown that premium prices will be paid for diversity. Cogema's pending purchase of Pathfinder is another manifestation of this tendency.

Non-US Producers

As noted earlier, we anticipate continued and increasing penetration of the US market by non-US producers. The Canadians with their high-grade Saskatchewan deposits are currently the principal and most aggressive long-term sellers in the world market.

Australia is somewhat puzzling. Timely entry was hampered by political events. Once viewed as essential, Australian production is now seen as an interesting alternative, particularly to those buyers intent on diversifying sources of supply. This factor, diversity, accounts for the sales made during the past few years at prices and under terms and conditions not otherwise competitive. Due to the Australian government's announced floor price policy, further sales appear foreclosed at this time. However, the government remains committed to the long-term expansion of the Australian uranium industry. And furthermore, any realistic hope of developing a viable enrichment industry in that country must include increased uranium production. Consequently, it is my personal opinion that Australia will, in time, alter its floor price policy in such a manner as to allow new sales without jeopardizing its existing contracts.

In South Africa, as you know, most uranium is

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produced as a by-product of gold mining operation and is sold through NUFCOR. As you probably also realize, much less is known about NUFCOR's customers and contracts than other major suppliers. This is, of course, exactly the way the South Africans want it. We do know that most contracts are long term, that many provided for prepayments and that production costs are generally low. While uranium profits are down from 1979 and 1980 levels, and some new uranium production operations may be uneconomic, South Africa is well placed to weather the current market weakness.

Namibia, Niger, and Gabon are similarly situated. While production costs are higher, long-term contracts insure the take-off of production. Any hopes to expand must, however, await an improved market and, in Namibia's case, resolution of current political uncertainties.

Prices

As regards prices, I have no forecasts for you. I would, however, offer these observations based on the realities of supply, demand, consumption and inventory.

The existence of a large and growing inventory overhang and the willingness of inventory holders to sell suggest continued pressure on spot price levels.

However, even current spot price levels are below the production costs of all but the highest grade producers. Thus, buyers seeking to purchase in the intermediate and long term are apt to be seeing offers which bear little resemblance to the spot market. It is possible that a substantial anomaly may develop between spot prices and prices offered under new long-term contracts. Our overseas friends, buyers and sellers alike, have often noted over the past years that we, in the United States, did not appreciate the difference between the spot and longer term market. Perhaps they are correct.

If US utilities are serious about contracting for firm supply in the longer term, they will have to abandon their procurement philosophy of spot market pricing in such contracts. They will have to accept the more conventional pricing approaches. By conventional, I refer to such familiar approaches as:

1. Cost plus;
2. Base price plus escalation;
3. Higher of floor price or market price.

If, on the other hand, these approaches are unacceptable and price remains paramount, two other developments are likely to follow:

1. First, some utilities will decline to contract at this time and rely instead on spot market.

2. Second, if the difference between the spot price and long-term offers exceeds the cost of money, we could see a reappearance of the early procurement strategy that emerged in the early 1970s. If taking delivery and paying *today* for use in 1986 is substantially cheaper than would be the case for contracting today for delivery and payment in 1986, then, to the extent that cash is available, we could expect to see such early procurement.

As a final note regarding prices, I must address the embargo question, for its reimposition at a low level would impact on prices, not right away, certainly, but in time. We have commented on this subject publicly in the past, and I will only reiterate those views, for they have not changed. They are as follows:

1. For a variety of reasons, mostly political in nature, we do *not* believe that a meaningful embargo on the use of foreign origin U_3O_8 will be enacted.

2. We do not believe that imports of foreign U_3O_8 represent a strategic threat to the US. We cannot be "OPECed" in uranium.

In conclusion, for better or worse and whether you like it or not, and despite government interventions and apparently unending litigation, the market system is working. Price remains the final arbiter.

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Table 1

FREE WORLD URANIUM PRODUCTION vs CONSUMPTION
(millions of pounds U_3O_8)

	1982	1983	1984	1985	1986	1987	1988	1989	1990
PRODUCTION	106.3	104.7	106.0	102.2	106.3	108.9	112.6	113.7	115.3
CONSUMPTION*	56.5	75.2	76.6	81.1	92.1	92.9	99.0	99.4	96.4

*Nuexco's Apparent Future Consumption Reference Case

Table 2

FREE WORLD URANIUM SUPPLY/DEMAND BALANCE
(millions of pounds U_3O_8)

	1982	1983	1984	1985	1986	1987	1988	1989	1990
PRODUCTION	106.3	104.7	106.0	102.2	106.3	108.9	112.6	113.7	115.3
less									
CONSUMPTION[1]	56.5	75.2	76.6	81.1	92.1	92.9	99.0	99.4	96.4
equals									
NET INVENTORY INCREASE	49.8	29.5	29.4	21.1	14.2	16.0	13.6	14.3	18.9
plus									
BEGINNING INVENTORY[2]	426.1	475.9	505.4	534.8	555.9	570.1	586.1	599.7	614.0
equals									
ENDING INVENTORY	475.9	505.4	534.8	555.9	570.1	586.1	599.7	614.0	632.9

[1]Nuexco's Apparent Future Consumption Reference Case
[2]Nuexco estimate 1982 Beginning Inventory

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Table 3
COMPARISON OF NUEXCO AND NUKEM
HISTORICAL E.V. & T.V.
(US Dollars/lb. U_3O_8)

	1976			1977		
	E.V.	T.V.	Nukem	E.V.	T.V.	Nukem
Jan	35.20	—	—	41.35	41.30	—
Feb	37.00	—	—	41.50	41.30	—
Mar	39.25	—	—	41.60	41.40	—
Apr	40.00	—	—	41.60	41.50	—
May	40.00	39.60	—	42.00	42.80	—
Jun	40.00	39.70	—	42.25	42.90	—
Jul	40.00	39.70	—	42.25	43.00	—
Aug	40.40	40.40	—	42.25	42.60	—
Sep	41.00	40.30	—	42.40	42.50	—
Oct	41.00	40.60	—	42.75	42.80	—
Nov	41.50	40.70	—	43.20	42.90	—
Dec	41.00	40.70	—	43.20	42.90	—

	1978			1979		
	E.V.	T.V.	Nukem	E.V.	T.V.	Nukem
Jan	42.90	43.10	42.00-45.00	43.25	43.60	42.20-43.50
Feb	43.25	43.30	42.00-45.00	43.25	43.80	42.50-43.50
Mar	43.25	43.70	43.00-45.00	43.25	43.70	42.50-43.50
Apr	43.25	43.60	43.00-45.00	43.25	43.40	42.50-43.50
May	43.40	43.60	43.50-45.00	43.25	43.60	42.50-43.50
Jun	43.40	43.20	43.50-45.00	43.00	43.70	42.50-43.25
Jul	43.40	43.30	43.40-44.50	42.70	43.70	42.50-43.25
Aug	43.10	43.40	43.00-44.20	42.70	43.60	42.50-43.25
Sep	43.25	43.40	43.00-44.20	42.20	43.60	42.50-43.25
Oct	43.00	43.60	43.00-44.20	42.20	43.60	41.50-42.50
Nov	43.25	43.40	42.45-44.00	41.00	43.50	41.00-42.00
Dec	43.25	43.70	42.20-43.50	40.75	42.30	41.00-42.00

	1980			1981		
	E.V.	T.V.	Nukem	E.V.	T.V.	Nukem
Jan	40.00	42.00	38.00-40.00	25.00	27.20	27.00-28.00
Feb	38.00	39.30	38.00-40.00	25.00	27.20	25.00-27.50
Mar	35.00	38.60	37.00-38.00	25.00	27.00	24.40-26.00
Apr	32.00	38.40	31.50-35.00	25.00	25.70	24.40-26.00
May	32.00	37.90	30.50-32.00	25.00	25.70	24.40-26.00
Jun	31.50	37.60	30.50-32.00	24.25	24.50	24.40-26.00
Jul	31.50	37.30	30.50-32.00	23.50	24.40	23.90-26.00
Aug	30.00	31.60	30.50-32.00	23.50	24.30	23.50-25.50
Sep	28.50	30.60	30.50-32.00	23.50	23.90	23.50-25.50
Oct	28.00	29.00	29.00-30.00	23.50	24.10	23.50-25.50
Nov	28.00	28.70	28.50-29.50	23.50	24.10	23.25-24.60
Dec	27.00	27.70	27.75-28.50	23.50	24.00	23.25-24.60

	1982		
	E.V.	T.V.	Nukem
Jan	23.00	24.00	23.25-24.60
Feb	23.00	23.70	—

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Table 4

UNITED STATES URANIUM PRODUCTION vs CONSUMPTION
(millions of pounds U_3O_8)

	1982	1983	1984	1985	1986	1987	1988	1989	1990
PRODUCTION	26.8	21.0	19.0	17.6	18.1	18.1	18.0	16.7	15.2
CONSUMPTION[1]	21.3	28.2	28.5	31.4	36.0	35.6	37.1	38.2	37.7

[1]Nuexco's Apparent Future Consumption Reference Case

Table 5

DISTRIBUTION OF RELATIVE
INVENTORY LEVELS OF US UTILITIES

Years of Forward Consumption in Inventory as of End of 1981	Number of Utilities
0 - 1	12
1 - 2	16
2 - 3	11
3 - 4	2
4 - 5	5
5 - 6	3
> 6	3

Table 6

UNITED STATES URANIUM CONSUMPTION vs DEMAND
(millions of pounds U_3O_8)

	1982	1983	1984	1985	1986	1987	1988	1989	1990
CONSUMPTION[1]	21.3	28.2	28.5	31.4	36.0	35.6	37.1	38.2	37.7
DEMAND[2]	34.0	37.9	46.4	46.0	47.8	50.4	50.4	53.5	51.4

[1]Nuexco's Apparent Future Consumption Reference Case
[2]Nuexco's estimate of the buyers' stated, or otherwise indicated, willingness to buy uranium now or at some time in the future.

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Table 7

URANIUM SUPPLIES and US DEMAND
(millions of pounds U_3O_8)

	1982	1983	1984	1985	1986	1987	1988	1989	1990
US Consumption[1]	21.3	28.2	28.5	31.4	36.0	35.6	37.1	38.2	37.7
US Demand[2]	34.0	37.9	46.4	46.0	47.8	50.4	50.4	53.5	51.4
US Utility Supplies	29.6	26.3	25.7	24.5	20.7	17.2	18.3	15.0	12.3
US Utility Imports	5.5	5.4	6.6	3.9	4.1	3.2	3.4	3.4	3.4

[1]Nuexco's Apparent Future Consumption Reference Case
[2]Nuexco's estimate of the buyers' stated, or otherwise indicated, willingness to buy uranium now or at some time in the future.

Table 8

US UTILITIES UNFILLED URANIUM DEMAND/CONSUMPTION
(millions of pounds U_3O_8)

	1982	1983	1984	1985	1986	1987	1988	1989	1990
Individual Utility Unfilled Demand	2.5	5.6	6.8	11.9	15.8	24.6	26.7	34.3	36.4
Aggregate Unfilled Consumption	0	1.9	2.8	6.9	15.3	18.4	18.8	23.2	25.4

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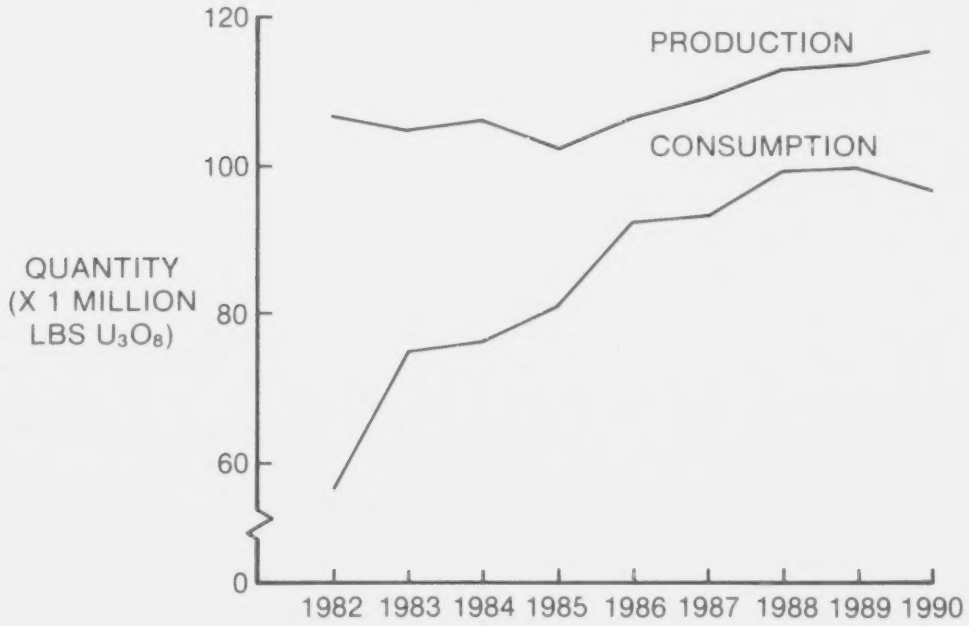
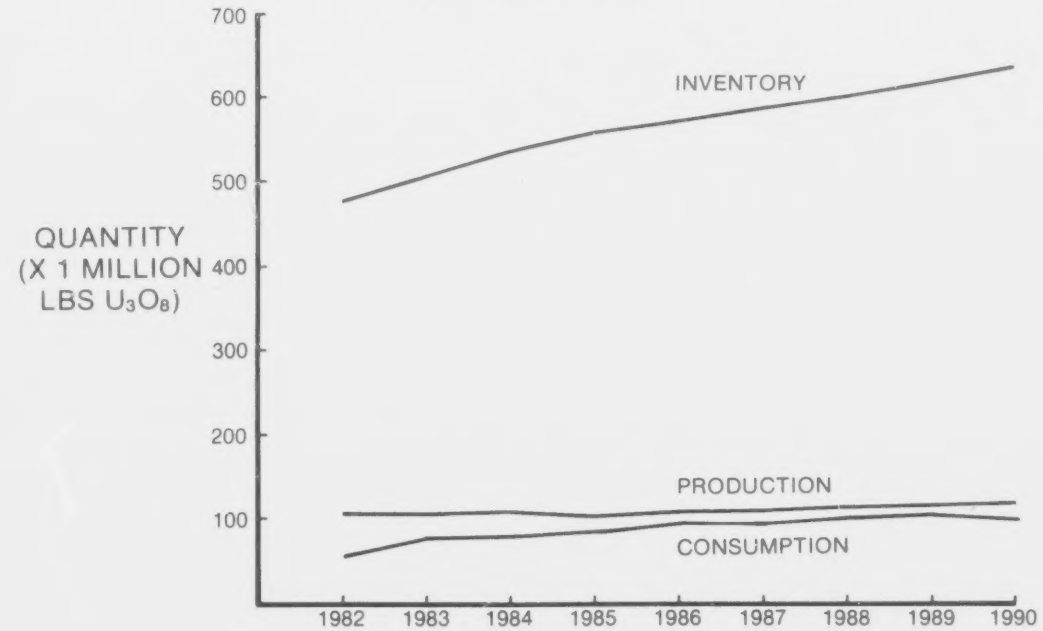
SLIDE 1: FREE WORLD URANIUM PRODUCTION
VS. CONSUMPTION



SLIDE 2: WORLD PRODUCTION, CONSUMPTION
AND INVENTORY



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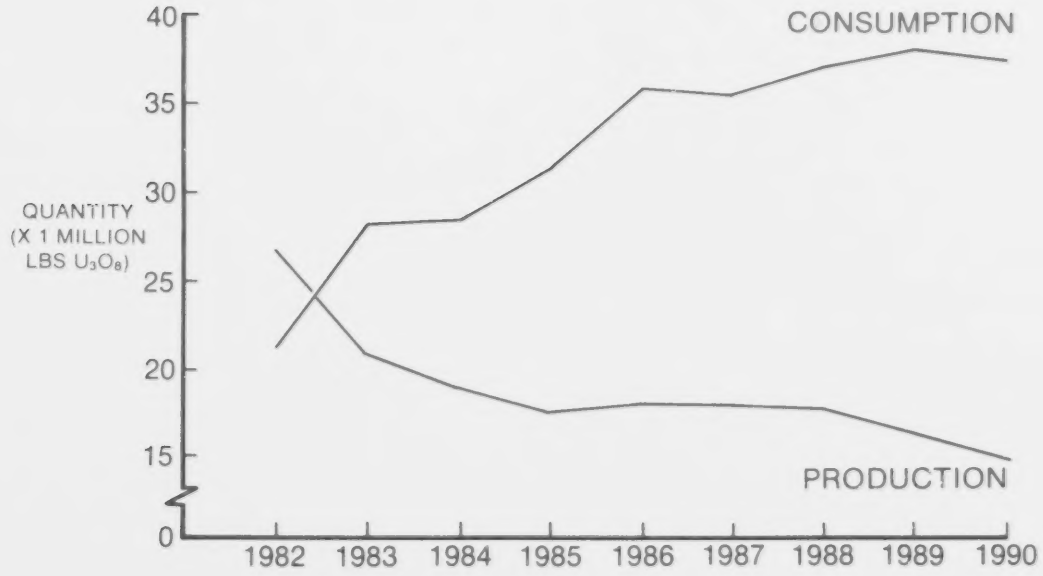
SLIDE 3: NUEXCO'S EXCHANGE AND TRANSACTION VALUES; NUKEM'S QUOTE RANGE

SLIDE 4: U.S. PRODUCTION VS. CONSUMPTION



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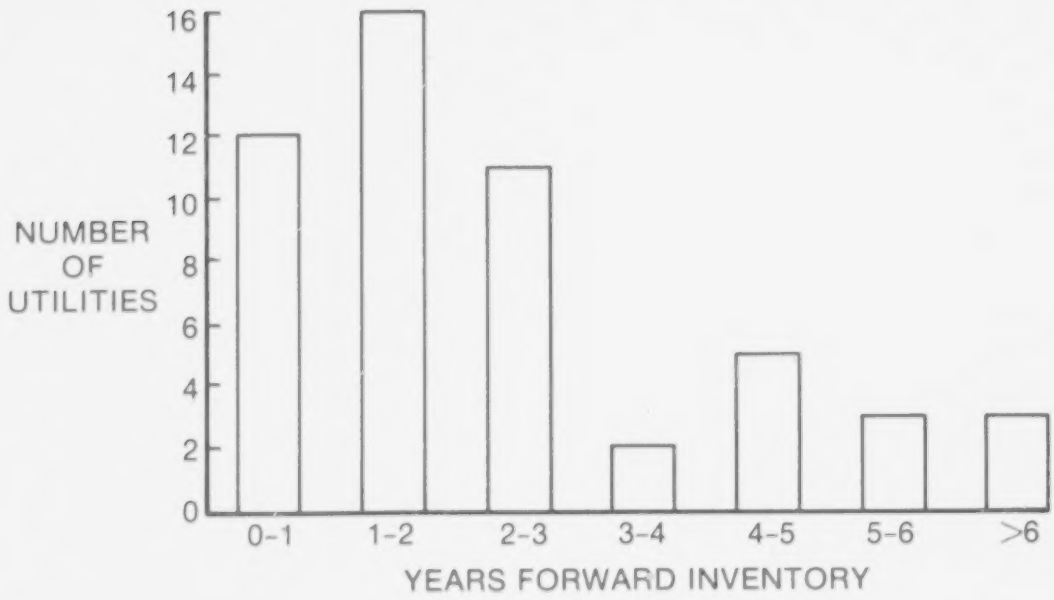
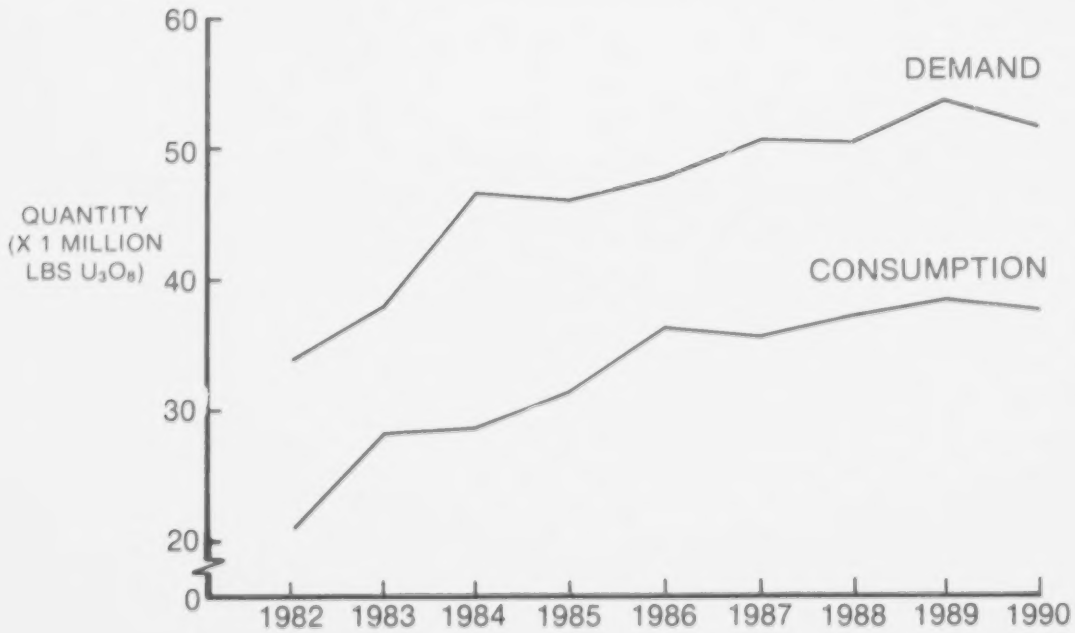
SLIDE 5: U.S. UTILITY INVENTORY DISTRIBUTION



SLIDE 6: U.S. CONSUMPTION VS. DEMAND



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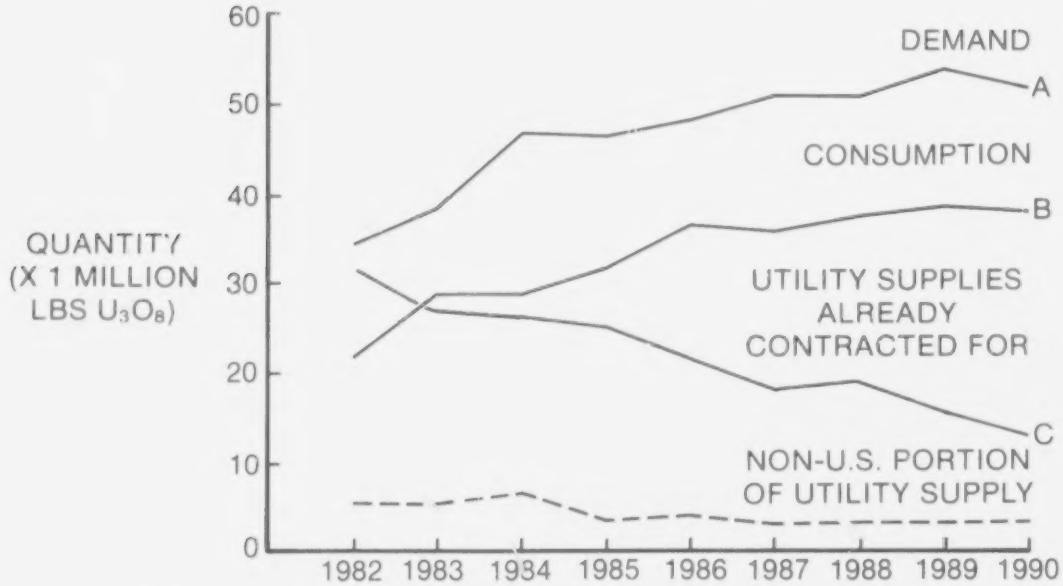
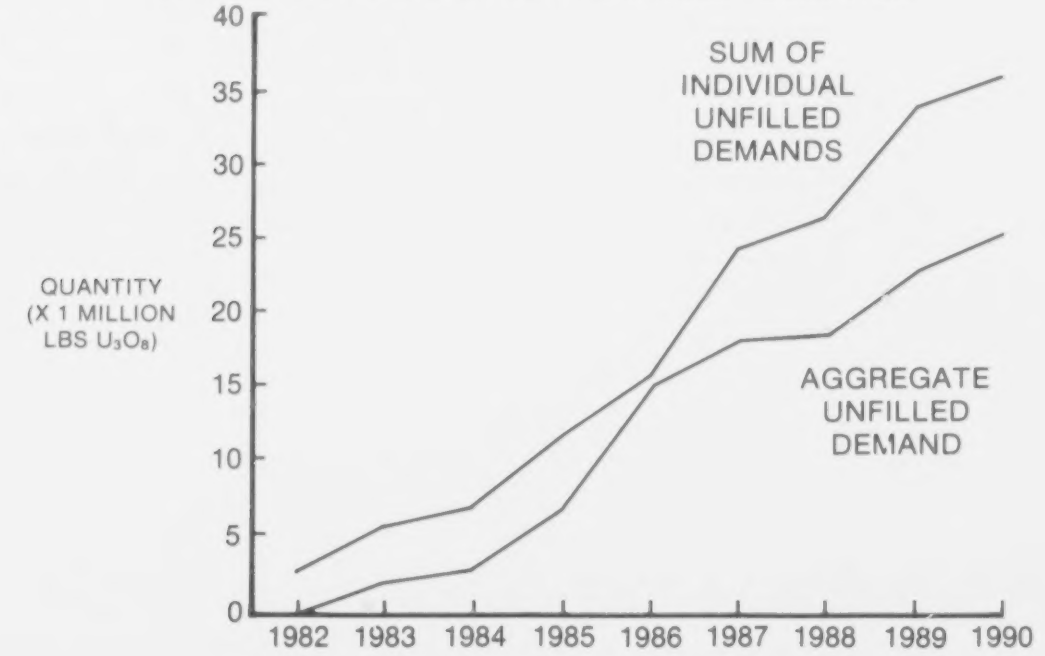
SLIDE 7: U.S. CONSUMPTION, U.S. DEMAND, U.S. UTILITY SUPPLY ALREADY CONTRACTED FOR



SLIDE 8: AGGREGATE U.S. UNFILLED DEMAND VS. SUM OF INDIVIDUAL U.S. UTILITY UNFILLED DEMANDS



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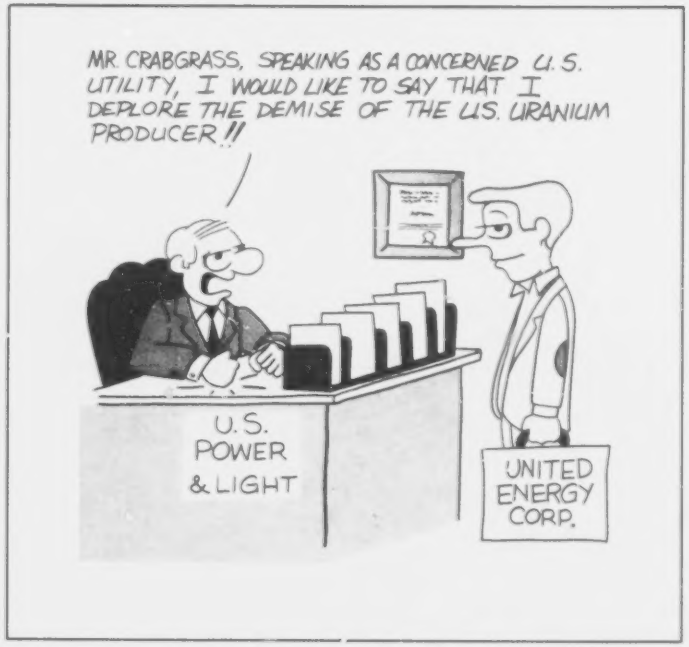
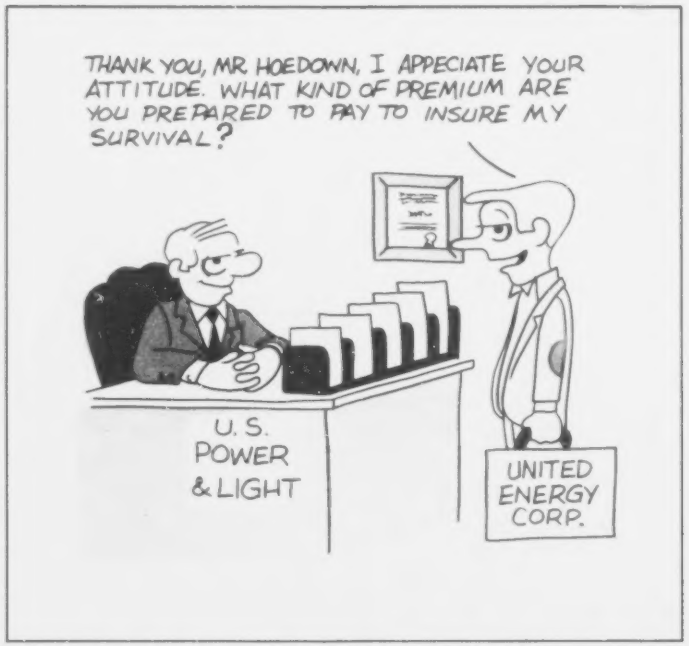
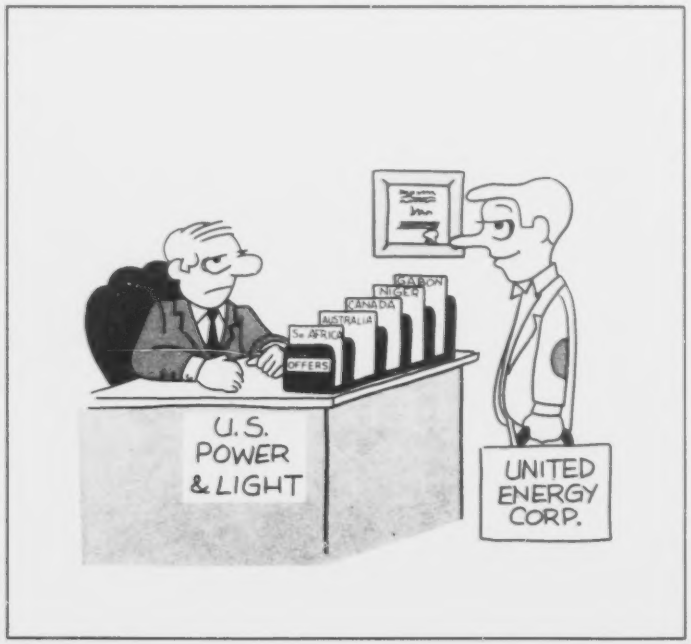

MR. CRABGRASS, SPEAKING AS A CONCERNED U.S. UTILITY, I WOULD LIKE TO SAY THAT I DEPLORE THE DEMISE OF THE U.S. URANIUM PRODUCER!!
U.S. POWER & LIGHT
UNITED ENERGY CORP.


THANK YOU, MR. HOEDOWN, I APPECIATE YOUR ATTITUDE. WHAT KIND OF PREMIUM ARE YOU PREPARED TO PAY TO INSURE MY SURVIVAL?
U.S. POWER & LIGHT
UNITED ENERGY CORP.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OFFERS
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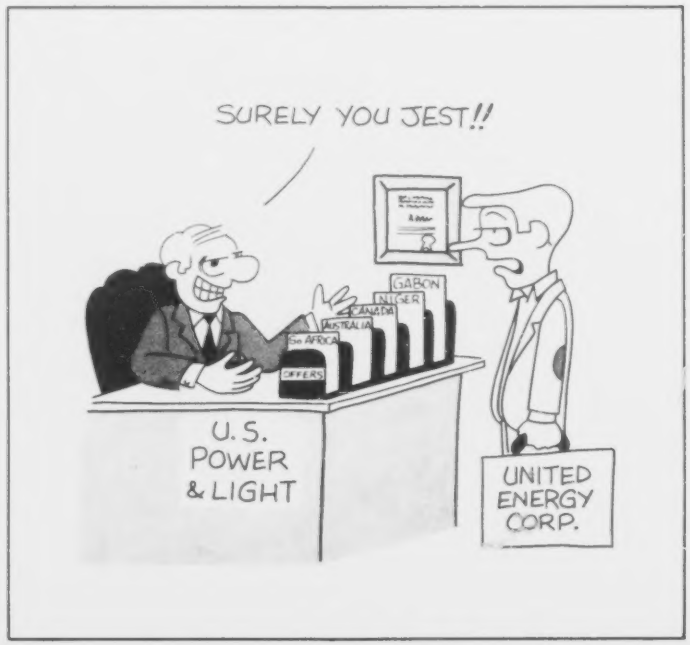
SURELY YOU JEST!!
GABON
NIGER
CANADA
AUSTRALIA
S. AFRICA
OFFERS
U.S. POWER & LIGHT
UNITED ENERGY CORP.

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NUEXCO

JUNE 1982 NUMBER 166

Monthly Report on the Uranium Market

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MONTHLY REPORT ON THE URANIUM MARKET

June 1982 No. 166

R. WESLEY MILLER, *EDITOR*

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FOREWORD

We are pleased to announce that Kenneth R. McCue has joined Nuexco and has been elected a Vice President. Ken will be based in Nuexco's New York office, but during the next few months will be spending part of his time in Nuexco's headquarters in Menlo Park, California.

Ken is a nuclear engineer holding a Bachelor's degree from Texas A&M and Master's and Ph.D. degrees from Purdue University. From 1973 to 1979 he was employed by Stone & Webster Management Consultants, Inc. More recently he was associated with Transnuclear, where he was Manager of Fuel Cycle Services.

MARKET ACTIVITIES

PRICING

The **Exchange Value** as of May 31, 1982 is $20.50 per pound U_3O_8, down $0.25 from last month's level of $20.75.

While this month's decrease of about one percent is modest when compared to April's decline of nearly eight percent, it marks the end of the third year of steady decline. Although there have been brief periods of stability, the Exchange Value has not increased once during the past 36 months.

Active sellers in the zero to one year time frame are offering 15.2 million pounds U_3O_8, up 2.2 million pounds from last month. Active uranium demand in the same time frame increased slightly, to only 1.6 million pounds U_3O_8. Consequently, the ratio of near-term supply to near-term demand increased slightly, from 9.3:1 last month to 9.5:1 this month. However, as much as five million pounds of additional U_3O_8 could become available at almost any time.

* * *

The **Transaction Value** as of May 31, 1982 is $22.70 per pound U_3O_8, an increase of $0.10 from April. May's Transaction Value includes 15 transactions totaling 4.0 million pounds U_3O_8 and covers a period of four months. Accounting for the slight increase are two transactions negotiated at higher prices some months ago, but only recently signed.

1. A US producer purchased 101,000 to 300,000 pounds U_3O_8 for 1982 delivery. The seller was another US producer.
2. A US producer purchased 101,000 to 300,000 pounds U_3O_8 for 1982 delivery. The seller was another US producer.

* * *

The **Conversion Value** as of May 31, 1982 is $1.00 per pound U as UF_6, down $0.20 from last month. As anticipated for the past two months, substantial additional conversion services entered the secondary market during May. The result is a dramatic oversupply in the secondary conversion market similar to that of the uranium market. Active sellers are offering 4.9 million pounds U in near-term conversion services, while active demand in the same time frame amounts to only one-seventh that amount, 700 thousand pounds U.

One conversion transaction is reported. One US utility sold another US utility conversion services for 301-600 thousand pounds U for 1982 delivery.

* * *

The **Loan Use Charge Rate** remained at six percent. At least one and possibly more loan transactions are under discussion at that general level.

AUSTRALIA

Three months before the completion of the final feasibility study for the Yeelirrie project, owned by Western Mining Corp. (WMC) (75 percent), Esso Exploration and Production Australia Inc. (15 percent) and Urangesellschaft Australia Pty. Ltd. (UGA) (10 percent), Esso announced its withdrawal from the joint venture. Esso stated that its continued involvement in the project was no longer economically justified. The 1978 uranium joint venture agreement provided that Esso, apart from its 15 percent equity share, would fund a further 35 percent of the capital costs in the form of a pre-payment and would receive an additional 35 percent of the uranium production, forecast to be 5.9 million pounds U_3O_8 annually. Esso would thus have taken half of the projected annual output and funded half of the estimated A$350 million initial outlay for the project.

Esso's withdrawal from Yeelirrie is consistent with the policy of its US parent, Exxon Corp., which is in the process of reducing its involvement in worldwide uranium ventures as well as its participation in other energy projects. The company recently announced its withdrawal from the Colony joint-venture oil-shale recovery project. There have been rumors also that Exxon is looking to extricate itself from the Midwest Lake uranium project in Canada, held by its Canadian affiliate Imperial Oil.

Esso's departure disengages the project's parties from an agreement that was advantageous for WMC, having been concluded during a period of more buoyant market conditions. It is unlikely that WMC will be able to negotiate the same terms today. However, the company is publicly optimistic that the venture will be satisfactorily restructured. To meet WMC's original timetable, a new partner would have to be found by February of 1983. The minority partner, UGA, is regarded as a potential taker of the Esso position.

Despite WMC's apparent optimism, it is clear that Esso's move is a setback in Yeelirrie's development.

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Although the project's production costs are claimed to be competitive in today's market, the overriding factors are market conditions and the price at which the Australian government would allow project sales. Those factors combine to make this an unfavorable time in which to seek financing partners. Also, it is possible that Esso's unwillingness to continue project expenditures will cause second thoughts for potential partners.

The Esso move has significant implications for other would-be producers in Australia. It creates a more objective perspective of the uranium market for managements whose market assessment may be colored by their own desires to get into production as early as possible. Exxon's withdrawal also reemphasizes that the US market is not a practical outlet for Australian production in the near to mid-term. Finally, the competition for market share will be affected, particularly for the Jabiluka and Lake Way projects, both of which recently received government approval to begin marketing future output.

Under Australian foreign investment guidelines, a uranium project cannot contain more than 25 percent foreign equity. In the past, long-term buyers from Europe and the Far East have tied uranium purchases to equity holdings. Until Esso's withdrawal, only the small Lake Way project (100 percent Australian owned by CSR through its subsidiary Delhi Petroleum) could have offered any equity as incentive to potential buyers. Now, however, a new option is available to European and Far East buyers who still wish to acquire a stake in Australian uranium. A buyer interested in an equity position in Australia could be in a very favorable position to negotiate a good deal by encouraging competition between the various projects.

As viewed by WM, however, the company's ability to offer an equity position will aid the sale of production and thus give Yeelirrie an edge over Jabiluka and other projects in competing for the limited market share. In this light, Esso could be thought to have done WM a favor by allowing them to get closer to potential customers with the new attractive offering.

* * *

The Australian Council of Trade Unions (ACTU) has changed the implementation method of its uranium policy. The ACTU executive group has adopted a working party report calling for a re-emphasis of the policy towards public and union awareness of the issue. Instead of directly opposing uranium mining and export, the group will engage in an information and education campaign supported by money from voluntary contributions by affiliated unions. The executive group also called on affiliated unions to institute a voluntary fund to support unionists who decide to oppose uranium mining by industrial action.

Since the Council's adoption of the hardline, anti-uranium policy in 1977, successful implementation has been very difficult. More than 100 shipments totalling 14 million pounds U_3O_8 have been exported from Australia and two new mines have been brought into production with a combined annual capacity of ten million pounds U_3O_8. ACTU's failure to implement the anti-uranium policy is tied to the fact that it lacks the power to prevent its members from working in uranium mines.

* * *

Legal opinions from practicing and academic lawyers have assured the Federal Executive of the Australian Labor Party (ALP) that implementation of its anti-uranium policy would not have compensation risks in the event that an Australian Labor government were elected. A future Australian Labor government *would* have the constitutional powers to implement the ALP policy to repudiate uranium contracts without fear of being liable for compensation to mining companies, according to the legal sources.

* * *

Australia has made its position on the impending US uranium import legislation known at various levels of the US government and has threatened to mount a challenge under the General Agreement on Tariffs and Trade (GATT) if the US Congress passes the legislation which is now in conference committee. The Australian diplomatic note says that the Australian government will reserve its rights under the GATT if the bill becomes law.

EUROPE

European reaction to the threat of a US embargo on uranium imports has been quite negative. The governments of **France** and **West Germany** have followed those of Canada and Australia by officially protesting the embargo proposed by Senator Domenici. At the same time, the Uranium Institute has written to the Congressional conference committee to express its concern over the issue.

The prevailing view in Europe seems to be that:

1. Previous protectionist actions by the US government and the antitrust litigation of recent years have

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MARKET ACTIVITIES

contributed heavily to the instability of the world market for uranium.

2. With its high capital costs and long lead times, the nuclear power business is having difficulty adjusting to cutbacks in nuclear power programs.

3. A new protectionist action by the US would aggravate the already unstable conditions facing the market.

The essence of Europeans' objections to the proposed embargo is economic. They simply do not want the US removed as a potential market, since it represents one-third to one-half of total uranium consumption for this decade. US uranium imports, however, have been limited by numerous factors, among them the following:

1. The US utilities' customary preference for US supply.

2. The original US embargo.

3. The antitrust investigations into the activities of uranium producers.

In recent years, attempts to sell into the US market have been hampered by large inventories and falling demand. Of late, however, foreign producers have been training their sights on the US market of the late 1980s. As high-cost US producers have cut back or withdrawn from the business altogether, foreign producers have begun to anticipate supplying as much as fifty percent of US needs by the latter part of this decade. If they succeed, US uranium imports would constitute twenty percent of world uranium consumption, but those imports represent a much larger share of the presently unfilled demand for that time frame.

It has been suggested that perhaps foreign producers would benefit from the imposition of a US embargo on uranium imports. The reasoning proceeds as follows:

1. A US import embargo would force US utilities to buy from US suppliers.

2. US demand would exceed US supply and spot prices would rise.

3. Spot prices would have to rise to more than $40 per pound U_3O_8 in order to stimulate enough US production to meet US demand.

4. Low US spot prices have been exerting downward pressure on negotiated prices for deliveries to non-US destinations. That pressure would stop and non-US producers would be able to negotiate more favorable prices for future deliveries.

That line of reasoning is rejected by most producers, who maintain that average delivery prices under long-term contracts in the US are still above $30 per pound and are not that far out of line with prices elsewhere. Countries like France, which are not net exporters of uranium and so would not stand to lose directly, maintain that all they want is a free world market for uranium and that the industry as a whole would suffer from protectionist policies.

There is a widespread belief that it would be the US itself which would suffer in the long run from an import embargo. By the latter part of this decade, the US could be vulnerable to retaliatory actions by governments of uranium producing nations. Furthermore, a uranium import embargo by the US could trigger retaliation by Canada, from whom the US imports large amounts of natural gas. Finally, protectionist actions by the US in support of its uranium industry would weaken US arguments in favor of free trade in other areas.

* * *

In **Spain**, the director of the Lemoniz nuclear power project, Sr. Angel Pascual Mugica, was assassinated on May 5, probably by ETA, the Basque terrorist group. The murder occurred just hours before the Basque government was to sign an agreement creating a government-controlled regional energy corporation. As mentioned in Nuexco Report 164, the corporation would have taken over operational control for the Lemoniz project from Iberduero.

After the murder, nearly 100 key Iberduero employees left their jobs on the Lemoniz project. In order to recruit a new engineering staff to complete work on the project, Iberduero has declared a three-month moratorium on construction at Lemoniz. The newly hired workers will resume work under maximum security conditions.

Despite this latest in a series of terrorist attacks aimed at the Lemoniz project, both Iberduero and the central government reaffirmed their commitment to the completion of the project.

* * *

On May 12 the CEGB published its "Statement of Case" to the **United Kingdom** government for its Sizewell B project. It argues for a nuclear power station of 1110 MWe based on the Westinghouse PWR and which it hopes to start building in 1984 for completion in 1991.

The CEGB document attempted to anticipate all the arguments which objectors will put forward at the public inquiry scheduled to open in January 1983. Apart from the safety case, much space has been dedicated to

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proving why construction should begin now.

Sizewell B will come onstream at a time when many older plants will be closing down (there is now in existence six percent of surplus capacity). The board believes that it is too dependent on expensive coal and stresses the need for fuel diversity.

So far there has been little response from objectors, perhaps because they have been stunned by the detail and abundance of the evidence. Mr. Fred Bonner, who describes himself as "acting chairman, unpaid" of the CEGB, believes that the future of civil nuclear power in Britain is at stake.

* * *

Dr. Walter Marshall, Chairman of the UKAEA, has been appointed the new Chairman of the CEGB, effective July 1, 1982. The appointment of this eminent figure signals the government's commitment to a continuing nuclear power program. Dr. Marshall, when Chief Scientist at the DOE, was sacked by the Labor Minister, Mr. Tony Benn, in 1977 for being too strong an advocate of nuclear power. Last summer Dr. Marshall was made Chairman of the task force which was created to give impetus to the PWR choice of reactor.

* * *

FAR EAST

Recent marketing trips to **Japan** by uranium producers from Australia and other nations have met with little success, if any. Japanese enthusiasm for new, large, long-term commitments has waned as prices have continued to soften, and it has become increasingly clear that nuclear growth rates will fall short of optimistic planning targets. Even the chance to acquire equity participation in new production ventures failed to provide the incentive anticipated by would-be producers.

Existing supply agreements are such that uranium is being delivered at rates well in excess of actual and likely future consumption. Consequently, some Japanese buyers are exercising contractual rights to reduce delivery quantities so as to minimize inventory build-up. Given such conditions, additional contracting is unlikely unless the sellers can offer substantial flexibility in areas of pricing and quantities. These areas are, of course, precisely those that are most difficult for producers attempting to base load new facilities. Lacking firm delivery schedules and prices, financing for large-scale new projects will be difficult, if not impossible, to obtain.

* * *

Taiwan's nuclear power program is administered by the government-owned utility, Taiwan Power Company (Taipower), and includes three units in operation, two under construction, and a sixth scheduled for startup in late 1982 as follows:

Unit	Type	MWe	Status
Chin-shan 1	BWR	604	Operational since 12/78
Chin-shan 2	BWR	604	Operational since 9/79
Kuosheng 1	BWR	951	Operational since 12/81
Kuosheng 2	BWR	951	Operation scheduled 12/82
Maanshan 1	PWR	907	Operation scheduled 4/84
Maanshan 2	PWR	907	Operation scheduled 4/85

Fuel loading for Kuosheng Unit 2 took place in March of this year as scheduled. As of April 3, 1982, Maanshan Unit 1 was 61.24 percent complete and Unit 2 was 36.6 percent complete. Construction on the two units appears to be moving well towards the estimated operational dates.

Six more units, representing 6,600 MWe, are planned for operation by the year 2000. The first two of these additional units are scheduled for operation in 1991 and 1992, and discussions with NSSS suppliers with respect to these two units are currently under way. A substantial portion of the financing for Taipower's nuclear program has come from the Export-Import Bank, so the US has historically had a preferred supplier position.

During 1981, nuclear power provided about 25 percent of the electric power generated in Taiwan; the balance was supplied by oil (52 percent), coal (11 percent), and hydro (12 percent). The availability factors for Chin-shan Units 1 and 2 during 1981 were 95.57 and 85.94 percent, respectively. In 1981, however, for the first time in its history, Taipower did not experience any load growth. In fact, generation was 1.32 percent below 1980 levels. Taipower's development program was revised accordingly, but since uranium is Taiwan's cheapest energy source, nuclear plans were not affected.

Taiwan lacks indigenous sources of uranium and political circumstances dictate that uranium may only be purchased from South Africa and the US. Taipower has, however, built up substantial uranium inventories, including some in the form of finished fuel. The presence of inventories means that Taipower will not be required

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to make new purchases until the middle of this decade. Naturally, a particularly attractive opportunity might induce Taipower to add to inventories before that time. Taipower is involved in only one uranium exploration program — a joint venture with another utility in Paraguay.

Taipower holds contracts with US DOE to cover all its present enrichment needs. The company has no plans for reprocessing and spent fuel is being stored at the respective plants in expanded capacity high-density racks.

UNITED STATES

The month of May produced some good news for the US nuclear utilities, but the good was outweighed by the bad.

On the negative side, the Nuclear Regulatory Commission (NRC) ordered Southern California Edison to indefinitely close its San Onofre Unit 1 which began operation in 1968. The closure is to permit an NRC study of design modifications necessary to meet earthquake safety standards.

* * *

The NRC staff was prepared to issue a fuel loading and low power license this month to South Carolina Electric and Gas for its Summer unit, but petitions have been presented to reopen ASLB hearings because of the steam generator. It is a Westinghouse D3 model which has been having vibration problems leading to tube thinning in operating reactors where it is used.

* * *

Two utilities announced delays in projected operating dates for nuclear reactors now under construction. Illinois Power has delayed its Clinton Unit 1 startup by one year, from 1984 to 1985. The Washington Public Power Supply System (WPPSS) reluctantly accepted the advice of the Bonneville Power Administration (BPA) and delayed for up to five years WNP Unit 1 (50 percent complete).

* * *

The Massachusetts Public Utilities Commission reported that, in its opinion, Boston Edison waited a year longer than it should have to cancel Pilgrim 2. The PUC approved the utility's request to recover from its customers its loss from the unit's cancellation, but the granted amount, $327.6 million over the next thirteen years, was substantially less than requested. Boston Edison has questioned the basis for calculating the amount to be recovered and is considering challenging the decision.

* * *

Puget Sound Power and Light has asked state and federal agencies to delay processing its applications to build two nuclear units at Hanford, Washington. Despite the request, the utility, the chief sponsor of the plant in partnership with three other utilities, has indicated it is not abandoning its plans to build the units.

* * *

The Pennsylvania Public Utilities Commission directed Philadelphia Electric to discontinue work on Limerick 2, which is 30 percent complete, and declared it intends to deny approval of any public offering to raise funds specifically for the unit. The utility reiterated its belief in its future need for power from Limerick 1 and 2 and is studying, among other options, whether to appeal in state courts, suspend construction for three years or cancel Limerick Unit 2.

* * *

Local voters in the vicinity of the Three Mile Island (TMI) nuclear plant voted more than 2 to 1 for a nonbinding referendum against the restart of the undamaged TMI Unit 1. A more serious blow to General Public Utilities and its subsidiary, Metropolitan Edison, came from a recent US Court of Appeals opinion. That opinion upheld an earlier ruling that the NRC must consider psychological stress as a public health issue in the Environmental Impact Statement on the restart of TMI 1. Psychological stress was defined as the "post-traumatic anxieties, accompanied by physical effects, and caused by fears of recurring catastrophe." The NRC is waiting for a specific order from the court on what action to take and NRC attorneys are studying the opinion. An appeal to the US Supreme Court is one option being considered.

* * *

The last of the negative news involves Washington Public Power Supply System (WPPSS). Twelve Washington state electrical cooperatives, owning more than 10 percent of the cancelled WNP Units 4 and 5, are

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MARKET ACTIVITIES

suing WPPSS. The twelve maintain they are not liable for repayment of bonds now scheduled to begin next January, or for termination costs now being assessed. They claim their original agreements with WPPSS call for termination payments when the WNP Units 4 and 5 are fully dismantled, an event which will not take place for several years at the earliest. Some fears have been expressed that if WPPSS loses the suit, it could be forced into receivership.

* * *

On the positive side, Commonwealth Edison received a fuel loading and lower power operating license for LaSalle 1. The NRC also authorized resumption of full operations for Rochester Gas and Electric's Ginna unit, forced into an unscheduled shutdown because of an accident in January 1982. Commonwealth Edison also received approval for an interim rate increase which the utility claims is needed to continue its nuclear construction program. However, the state's Attorney General has announced he is considering a court order barring the increase.

* * *

Connecticut Yankee Atomic Power Co. was granted a record 17 percent return on equity in a preliminary government ruling. The Federal Energy Regulatory Commission has to uphold the decision for it to become effective. It would set an encouraging precedent for utility investors.

* * *

The NRC's Atomic Safety and Licensing Board has authorized licensing of Pennsylvania Power and Light's Susquehanna Unit 1. The fuel loading and low power license has to be approved by the NRC staff and is expected in July; however, the unit is not scheduled to enter commercial operations until mid-1983.

* * *

The US Department of Energy released its "Short Term Energy Outlook" report showing nuclear power as the fastest growing US electric power source. The DOE's estimated 1982 share of electric power output was listed as:

Nuclear	13.4 percent
Coal	54.3 percent
Hydroelectric	11.8 percent
Oil	7.1 percent
Natural Gas	13.1 percent
Geothermal & Other	0.3 percent

* * *

The Reagan Administration formally asked Congress to dismantle the Energy Department. The bill calls for transferring nearly all DOE functions to the Commerce Department including safety, health and nuclear environmental programs. The Interior Department would take over some mining related programs such as leasing. The fate of the proposal is uncertain; there is strong opposition to the dismantling plan in the House of Representatives.

* * *

The US Senate passed the National Nuclear Waste Policy Act of 1982. Similar legislation is in hearings in the House. The Senate bill calls for a "federally owned and operated system for the interim storage of spent fuel at one or more AFRs." There is no indication of when the House will vote on a comparable measure.

* * *

The budget cutting mode of the Congress may affect a previously invulnerable project, the Portsmouth, Ohio uranium enrichment plant now under construction. Support for the project is faltering in both the House of Representatives and the Senate. DOE's argument that the plant is needed to meet future increased demand for enriched uranium fuel is being challenged by both Democrats and Republicans. The primary basis for legislators' criticism of the project came from two draft government reports, one by the Government Accounting Office and the other by the Congressional Research Service, which question the need for additional enrichment plant capacity. The GAO report went so far as to maintain that current enrichment capacity will be "ample" for the rest of this century.

* * *

Senator Domenici's bid to limit uranium imports to 20 percent of US reactor needs caught many interested parties by surprise, so initial reactions in the US were often either favorable or noncommittal. In recent weeks, however, opposition has increased and more arguments against the embargo proposal have been put forward. Consequently, it is quite unlikely that it will be passed by this session of Congress, except perhaps in a diluted version.

Opposition is coming from several different areas:

1. Most uranium users are reluctant to support a program which could increase their cost of fuel, especially if its effects could be felt in the near future.

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2. The Justice Department sees import restrictions as encouraging international cartels and subject to question under the General Agreement on Tariff and Trade (GATT).

3. The State Department and a number of congressmen see restriction as incompatible with the US policy of free trade.

4. Friendly nations — notably Canada and Australia — are lobbying hard against limitations on their exports. After supporting US non-proliferation policies, they expect the US to reciprocate by remaining a reliable trade partner, especially with respect to the nuclear fuel cycle.

5. The Department of Energy does not wish to relinquish cognizance over a sector of the nuclear field. Neither does the Nuclear Regulatory Commission seek responsibility for administering a program for restricting uranium imports.

Supporters of limitations emphasize the need for a viable, healthy uranium producing industry and for national self-sufficiency in energy. They are loath to see their country deliberately embark on a course of action which could lead to future dependence on foreign sources for such a basic fuel. Although others dismiss the parallel with oil, they view it as obvious.

They believe that the piecemeal actions of scores of individual utilities and regulatory bodies will not insure a vigorous domestic producing industry. Opponents insist that the fundamental problems of US uranium producers cannot be solved by unilateral US government action, but that they are a direct result of the decline of the US nuclear power business. Opponents also point out that many of those parties who have announced support for an embargo have vested interests to protect.

Although legal action limiting uranium imports to 20 percent of domestic need is unlikely, there is a growing feeling that "something will be done." Any such action could be largely symbolic, such as the commissioning of another in the long series of studies. Another possibility is a freeze at the present 40 percent of need which can be served by non-US uranium. US utilities would find it relatively easy to live with the latter limit.

* * *

Application and Clarification

Nuexco Report 165 contained a brief discussion concerning US Nuclear Regulatory Commission staff views on which nuclear power plant licenses might be issued this year. This article amplifies the previous discussion, by presenting a summary of the licensing status of the reactors Nuexco believes are farthest along in the licensing process.

There are four nuclear plants for which a fuel loading and low power operating license has been authorized by the NRC staff or recommended by the NRC's Atomic Safety and Licensing Board (ASLB):

San Onofre 2	Southern California Edison
LaSalle 1	Commonwealth Edison
Susquehanna 1	Pennsylvania Power & Light
Summer	South Carolina Electric & Gas

The ASLB may recommend in 1982 a fuel loading and low power operating license for four additional reactors:

Zimmer 1	Cincinnati Gas & Electric
Grand Gulf 1	Mississippi Power & Light
Diablo Canyon 1	Pacific Gas & Electric
Diablo Canyon 2	Pacific Gas & Electric

It should be noted that a reactor's presence on this list does not necessarily imply that it will be one of the next eight units to receive a full power operating license in the US. For example, Diablo Canyon 1 received a fuel loading and low power operating license in late 1981, but it was suspended almost immediately when discrepancies were found in the earthquake safety design features. Design modifications are under review.

That sort of sudden, unanticipated setback could hit any one of the units listed in this article at any step in the licensing process. It is reasonable to infer that no units absent from these two lists are likely to receive a full power operating license this year. It is Nuexco's opinion that only four or five of these units will attain that goal.

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MARKET DATA

URANIUM SUPPLY

Nuexco Reference Number	Delivery Period[1] (Thousands of Pounds U_3O_8) 0 to 1 Year	Beyond 1 Year	Remarks
Available for Sale:			
ACTIVE			
1575		500 per year	Long Term
1637	300		
1739	1,600		
1769A	130		UF_6
1818		250 per year	Long Term
1845	500		
1872	1,100	400	
1877	50		
1895	1,800		
1900	2,000		some UF_6
1906	290		
1909	2,200		UF_6
1916	2,000		UF_6
1921	1,700		UF_6
1925	500		UF_6
1928	1,000		UF_6
TOTAL:	15,170		
INACTIVE			
1581B		150 per year	Long Term
1610	150		
1664	100		
1774	50		
1804	615		
1805		500 per year	Long Term
1810		750	
1814	250		
1879	750		
1920	2,500		
1932	300		
TOTAL:	4,715		

[1]Measured from the date of this Report

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MARKET DATA

URANIUM SUPPLY

Nuexco Reference Number	Delivery Period[1] (Thousands of Pounds U_3O_8) 0 to 1 Year	Beyond 1 Year	Remarks
Available for Loan:			
ACTIVE			
1742	500		
1815	1,000		
1884	275		
1919	3,000		
1931	600		
1932A	1,000		
1938	2,000		
TOTAL:	8,375		
INACTIVE			
1910	1,000		
1927	1,700		
TOTAL:	2,700		
Inquiries to Borrow:			
ACTIVE			
1780	260		
TOTAL:	260		
INACTIVE			
1621	300		
TOTAL:	300		

[1]Measured from the date of this Report.

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MARKET DATA

URANIUM DEMAND

Nuexco Reference Number	Delivery Period (Thousands of Pounds U_3O_8) 0 to 1 Year	Beyond 1 Year	Remarks
Inquiries to Purchase:			
ACTIVE			
1410		1,500 per year	5,000 Total
1638		300 per year	
1699	500		
1842		500 per year	2,000, start 85
1843	400		
1871	120	250 per year	1983-86
1914	50	150	
1915		500	UF_6
1923	30		
1924	300		
1933	100		
TOTAL:	1,560		
INACTIVE			
1459		200 per year	Long Term
1652		200 per year	Long Term
1888		500 per year	Long Term
1935		400	
TOTAL:			

[1]Measured from the date of this Report.

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MARKET DATA

CONVERSION SUPPLY

Nuexco Reference Number	Delivery Period[1] (Thousands of Pounds U as UF6) 0 to 1 Year	Beyond 1 Year	Remarks
ACTIVE			
1584	550	300 per year	Long Term
1607	1,000		
1609	500	1,500 per year	Long Term
1886	500		
1921	1,700		
1925	450		
1936	200	200 per year	Long Term
TOTAL:	4,900		
INACTIVE			
1619		300	
1661	200		
1840	300		
1902		350	
TOTAL	500		

CONVERSION DEMAND

Nuexco Reference Number	Delivery Period[1] (Thousands of Pounds U as UF6) 0 to 1 Year	Beyond 1 Year	Remarks
ACTIVE			
1622	700	700	
TOTAL:	700		
INACTIVE			
1594	400	450 per year	Long Term
TOTAL:	400		

[1]Measured from the date of this Report.

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MARKET DATA

CURRENT TRANSACTIONS[1]

Uranium Transactions

Nuexco Reference Number	Delivery Period	Approximate Quantity (thousands of pounds, U_3O_8 equivalent)	Approximate Price as Percent of Current E.V.	Seller Group	Buyer Group	Remarks
1669	1982	101-300	117	US	US	
1796	1982	101-300	111	US	US	

Conversion Transactions

Nuexco Reference Number	Delivery Period	Approximate Quantity (thousands of pounds, U equivalent)	Approximate Price as Percent of Current C.V.	Seller Group	Buyer Group	Remarks
1770	1982	301-600	125	US	US	

[1]Transactions listed include not only those in which Nuexco was involved, but also all others of which Nuexco is aware.

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RAW MATERIALS

CLUFF LAKE PROJECT — PART III

Geology

The majority of uranium deposits discovered in northern Saskatchewan occur in close association with the regolith zone and the unconformity between Aphebian crystalline basement rock and overlying the Helikian Athabasca Formation. This relationship is well expressed in deposits along the east margin of Athabasca basin. The Cluff Lake deposits occur in the same geologic environment, but within the basin interior where the unconformity has been exposed by structural deformation and erosion.

The Cluff Lake uranium deposits occur within the central limits of the Carswell Dome. The domal features consist of multiple circular fault zones with a central core of crystalline basement rock. The Athabasca Formation, in turn, surrounds the Archean core and marks the horizon of the unconformity. Uranium mineralization has been found in the Athabasca Formation, the regolith zone and Archean rocks at the unconformable contact and at depth in the Archean rocks.

The Carswell structure is the most prominent geologic feature to be found in the otherwise flat and featureless Athabasca basin. The outer ring of the structure is about 35 km in diameter; the central core is 17 to 18 km in diameter. The outer ring consists of uplifted and eroded blocks of the Carswell Formation, a bedded dolonite, and the underlying Douglas Formation which is made up of interbedded siltstones, shales and fine-grained sandstones. The two formations are only found in the Carswell structure and neither is known to contain uraniuim mineralization. Figure 1 shows the general geology of the structure and the ring faulting. The area designated the "wedge" is the area of uranium mineralization.

The Douglas Formation conformably overlies the Athabasca Formation which, in turn, makes up the zone of 5 to 8 km between the outer rim formations and the Archean core. The Athabasca consists of highly folded and faulted quartz-pebble conglomerates, quartzites and sandstones. Generally, all sediments dip toward the center of the structure, but vertical and overturned beds are common, especially in the Athabasca Formation. The basement rocks reveal evidence of metamorphism, folding and faulting as related to earlier periods of orogenesis; however, they also show the effects of structural changes associated with the Carswell structure. In fact, preserved segments of the Athabasca/basement rock contact show normal to completely overturned sequences.

The basement rock and the Athabasca Formation have been further disturbed by intrusions of rhyolite and associated dike-like breccia zones which contain fragments of all rocks known to occur within the structure. The intrusions have been age-dated at about 470 million years (m.y.) compared to 2500 m.y. for the basement rocks and 1350 to 1400 m.y. for the Athabasca Formation. Table 1 is a generalized stratigraphic and orogenic time correlation chart for the geology of the Carswell structure.

Table 1

GENERALIZED STRATIGRAPHIC AND OROGENIC TIME CORRELATION CHART OF THE GEOLOGY OF THE CARSWELL STRUCTURE

Geologic Period	Event Formation/Orogeny	Age Estimate (million years)
Cenozoic	Pleistocene/Recent Glacial/fluvial Lacustrine deposition	2
	— — — — Unconformity — — — —	
Ordovician	Carswell Intrusions	470 plus
	Carswell Structure	490-465
Middle	HELIKIAN ERA	1650-1300
Proterozoic	Carswell Formation	1300 plus/minus
	Douglas Formation	1300 plus/minus
	Athabasca Formation	1300 plus
	— — — — Unconformity — — — —	
	Regolith	1630 plus
Lower	HUDSONIAN OROGENY	1735
Proterozoic	APHEBIAN ERA	1850-1700
	Firebag Domain	2480-1700
	— — — — Unconformity — — — —	
	KENORAN OROGENY	2480 plus
Archean	Firebag Domain	2500 plus
	Basement	2500 plus

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The origin of the Carswell structure remains controversial to many geologists. The favored geologic interpretation suggests the structure resulted from meteoritic impact. This interpretation is supported by such evidence as an abundance of shattered and recemented quartz pebbles and boulders in the basal conglomerates of the Athabasca Formation, the breccia dikes and varying degrees of metamorphism noted in the basement rock and the Athabasca Formation, and, of course, the symmetry of the multi-ring faulting around the outer limits of the structure.

The less popular theory of origin considers deformation of the sediments due to a domal intrusion of Archean Crystalline rocks during Middle Proterozoic time. The intrusion caused upheaval of the overlying sediments, associated ring faulting around the outer edge of the domes infuence, and related metamorphism of the Athabasca Formation and the regolith zone where there was close contact with the intrusive body. Rapid subsidence of the crystalline mass occurred during the development of the Athabasca Basin in Quaternary time. This allowed the uplifted blocks of sediments to subside toward the center of the structure, causing secondary ring structures and overturned fault blocks. In either case of origin, extensive erosion during Quaternary time has left the basement rock, the regolith zone and the Athabasca Formation exposed throughout the central portion of the structure. All three rock-types are host to uranium mineralization.

Geology of Mineralized Area

The important uranium deposits discovered at Cluff Lake are limited to a small wedge of basement rock in the south-central part of the Carswell Structure. The wedge is about 2000 meters wide at the D & N deposits narrowing to less than 600 meters at the Claude deposit 3400 feet to the northwest. In addition to the five uranium deposits located in the wedge, at least twelve more anomalous areas of potential interest were discovered. Follow-up evaluation of the 12 areas led to the discovery of highly radioactive rocks and mineralized boulders. At least half of the anomalies are in the Athabasca Formation and, to date, do not constitute economically important discoveries. The remaining anomalies are in basement rock and/or gneisses, all of which offer only limited potential for minable ore. However, exploration for additional ore occurrences with the unconformity is continuous by the joint venture. Figure 2 shows the location of the main mineral zones and the geology within the wedge.

The geology within the wedge is primarily broken blocks of basement rock and highly faulted sections of regolith and Athabasca sandstone and conglomerates, some of which are completely overturned. The basement material consists almost entirely of quartzitic gneisses and red granitoid gneisses interlayered with quartzites and meta-arkoses and meta-pelites of the Clearwater/Firebag domains. The closely-related domains are the western-most lithostructural units recognized in the Athabasca basin.

The regolith mantle varies in thickness from a few meters to about 40 meters. It represents the highly altered and eroded Aphebian surface. The mantle is consistently maroon in color due to strong hematite alteration. Outcrops of regolith have formed along a parallel northwest-southeast fault zone that cuts both the Athabasca Formation and the basement rock.

Blocks of Athabasca Formation cover the wide end of the wedge. It is in contact with the basement rock and a red granitoid gneiss. It consists mostly of conglomerates up to cobble size, grading into fine to coarse sandstones and interbedded shales away from the contact. Certain horizons of Athabasca are colored pink to maroon due to heniatization. However, alteration and coloration is more intense adjacent to the contact with the regolith.

Cluff breccias and quartzitic gneisses cover much of the area in the northwest half of the wedge. They occur as large bodies in a general northwest trend, but narrow bands up to four or five meters are not common. The breccia contains angular fragments of every rock-type represented in the Carswell structure. In all probability, the breccia zones developed during the tectonic activity related to the structure itself.

Uranium Deposits

Uranium mineralization is found primarily in the quartzitic gneisses, the red granitoid gneisses and the Athabasca Formation. Of the five ore deposits delineated within the wedge-zone, the D deposit has been mined out, preparations to mine the Claude and the N deposits are in progress, and the Dominique deposit is in the final evaluation stage; the O-P deposit is considered sub-economic in today's market environment.

The first ore deposit found by Amok was the unusually high-grade D deposit. The deposit contained massive pitchblende up to five meters thick along the unconformity of an overturned block of the Athabasca

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Formation. Mineralization was concentrated in Athabasca pelites and quartzitic gneisses of the regolith zones. The ore was confined to a zone about 140 meters by 25 meters (see Part II in Report 165 for a detailed description of the deposit). Uraninite was a companion mineral to pitchblende, both of which were associated with carbonaceous organic matter in the sediments. The deposit contained a number of accessory minerals, but primarily native gold and gold tellurides, selenium and nickel. The mineralization was age-dated at 1100 million years.

The N and Claude deposits are very similar in occurrence. The ore is found in highly faulted blocks of basement rock. The host rock is primarily quartzitic gneiss and pelitic gneiss. Mineralization occurs within shear zones and along the fault contact between the two gneisses. Abundant mineralization is located within the thicker mylonites associated with the nearly horizontal faulting and in associated Cluff breccias. The main ore minerals are uraninite and coffinite; galena, graphite and molybdenite are the most abundant accessory minerals present.

The O-P deposit is in highly faulted and fractured rock along the unconformity. This resembles the D deposit in nature of occurrence in the regolith and the Athabasca Formation; even the mineral suite is almost the same. The main difference is the fact that the O-P is low-grade ore.

The Dominique deposit is similar to the Claude deposit. It is smaller and of lower grade, but host rock and mineral assemblage are compatible.

The placement of ore in the Cluff Lake area probably took place between 1100 and 1400 million years ago. The uranium is considered to have originated by precipitation from groundwater in fractures, faults and other traps in the basement rocks, probably during the Hudsonian Orogeny. Following a prolonged period of hydrothermal and tectonic activity and deposition of the Athabasca Formation, the uranium mineralization was at least partially remobilized to create enriched mineral zones in the basement rock and form new mineral deposits in the regolith and Athabasca Formation. The process continued throughout the evolution of the Carswell structure, and possibly well into early Cenozoic time.

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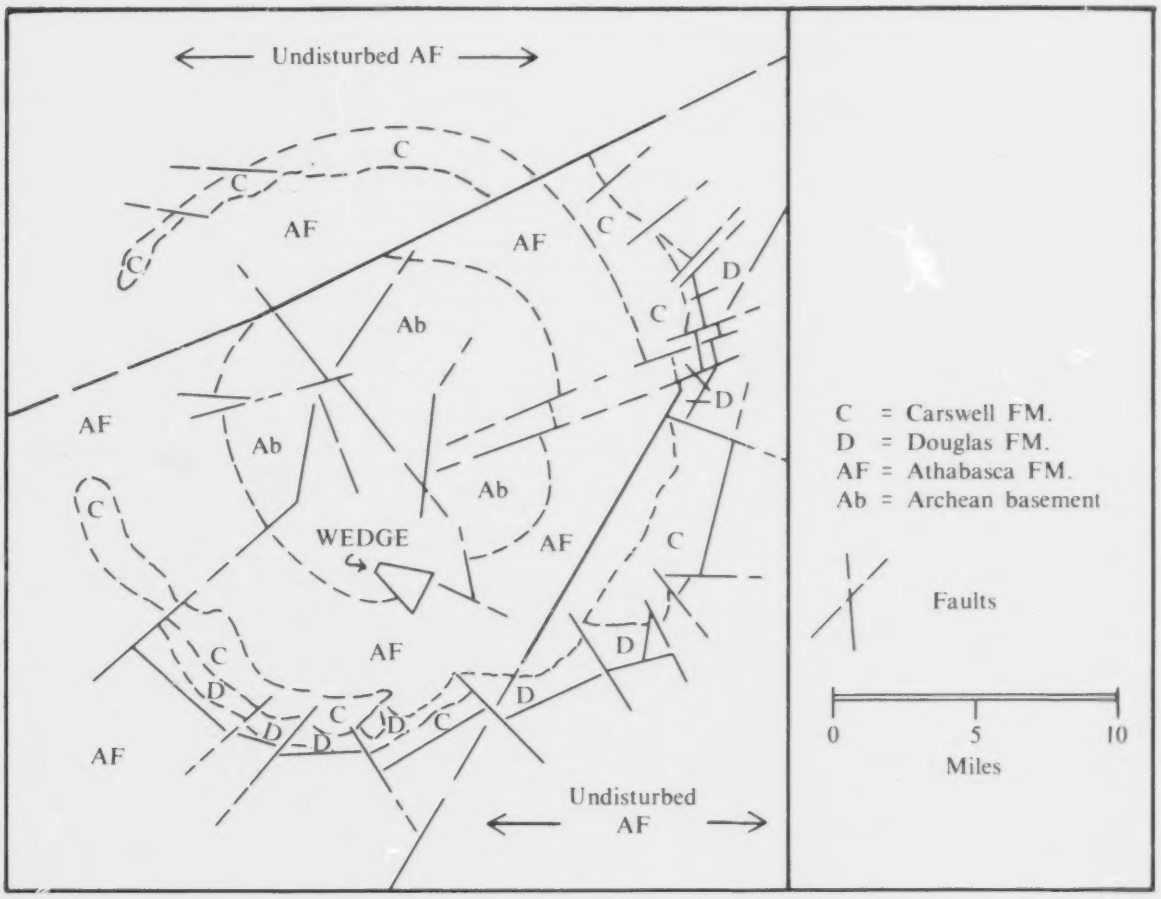

Figure 1

GENERAL GEOLOGY OF THE CARSWELL STRUCTURE
NOTE LOCATION OF MINERALIZED WEDGE.
(Adapted from Tapaninen, 1975)

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RAW MATERIALS

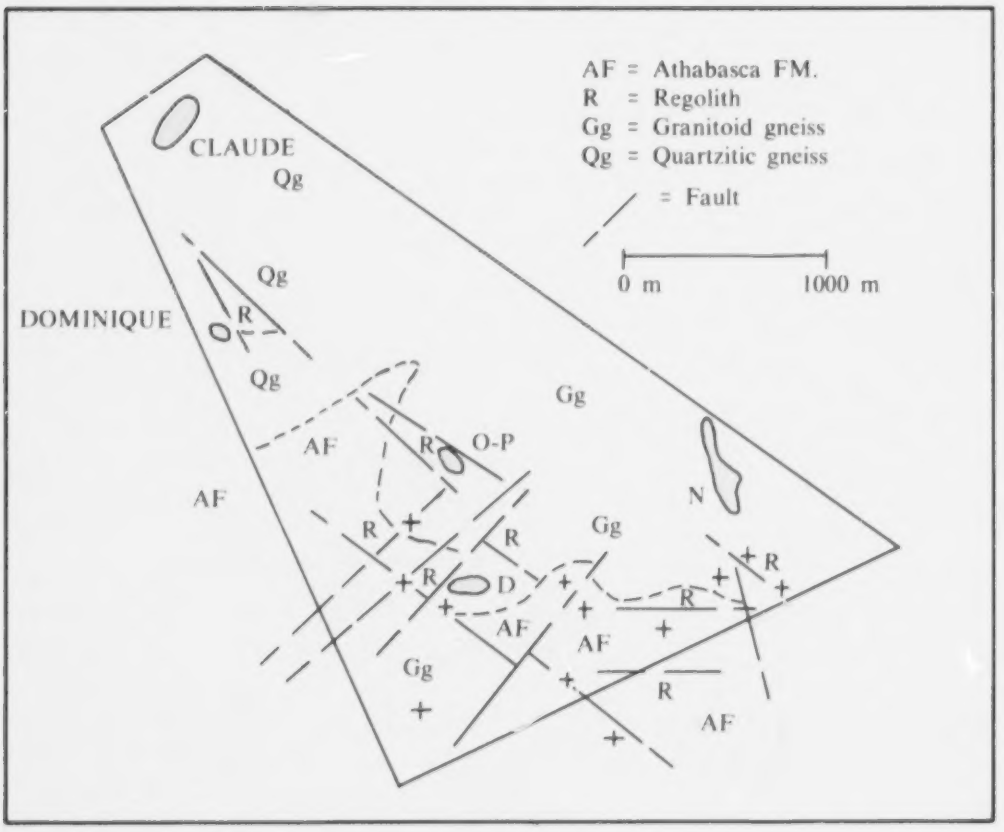

Figure 2

MINERALIZED WEDGE LOCATED IN SOUTH PART OF ARKEAN BASEMENT CORE, SHOWING FIVE URANIUM DEPOSITS & MINERALIZED AREAS.
(Adapted from Harper, 1980)

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STATISTICAL DATA

EXCHANGE VALUE $20.50/lb. U_3O_8
Determined as of May 31, 1982

Definition[1]

The Exchange Value is Nuexco's judgment of the price at which transactions for significant quantities of natural uranium concentrates could be concluded as of the last day of the month.

Derivation

Nuexco bases the Exchange Value upon:

A. Data from recently completed transactions.
B. Data from pending transactions.
C. Firm bids to buy and firm offers to sell.
D. Prices purchasers have expressed a willingness to pay, but for which Nuexco is not aware of firm bids to buy, and prices sellers have expressed a willingness to accept, but for which Nuexco is not aware of firm offers to sell.

Comments

Nuexco does not consider the following in determining the Exchange Value:

A. The price of uranium delivered or to be delivered under old contracts.
B. The price of uranium delivered in connection with contract renegotiations or other than arm's length transactions.

[1]In December, 1981, Nuexco published a history of the Exchange Value which chronicled, month-by-month, changes in its definition, usage and derivation. Copies are available upon request.

TRANSACTION VALUE[2]
Determined as of May 31, 1982

$/lb. U_3O_8	Millions of Pounds	Number of Transactions	Number of Months
22.70	4.0	15	4

Definition

The Transaction Value is a weighted average price of recent transactions, and is based on prices paid for U_3O_8 in transactions closed within the previous three-month period and for which delivery was scheduled within one year of the transaction date. At least ten transactions totaling at least two million pounds U_3O_8 are included in each calculation, or the sample time is extended as necessary to include these minima. Foreign currencies are converted to US dollars as of the transaction date.

[2]Transaction Values for 1976 through 1981 and their associated parameters (millions of pounds, number of transactions and number of months) are tabulated on pages 31 and 32 of Report 161.

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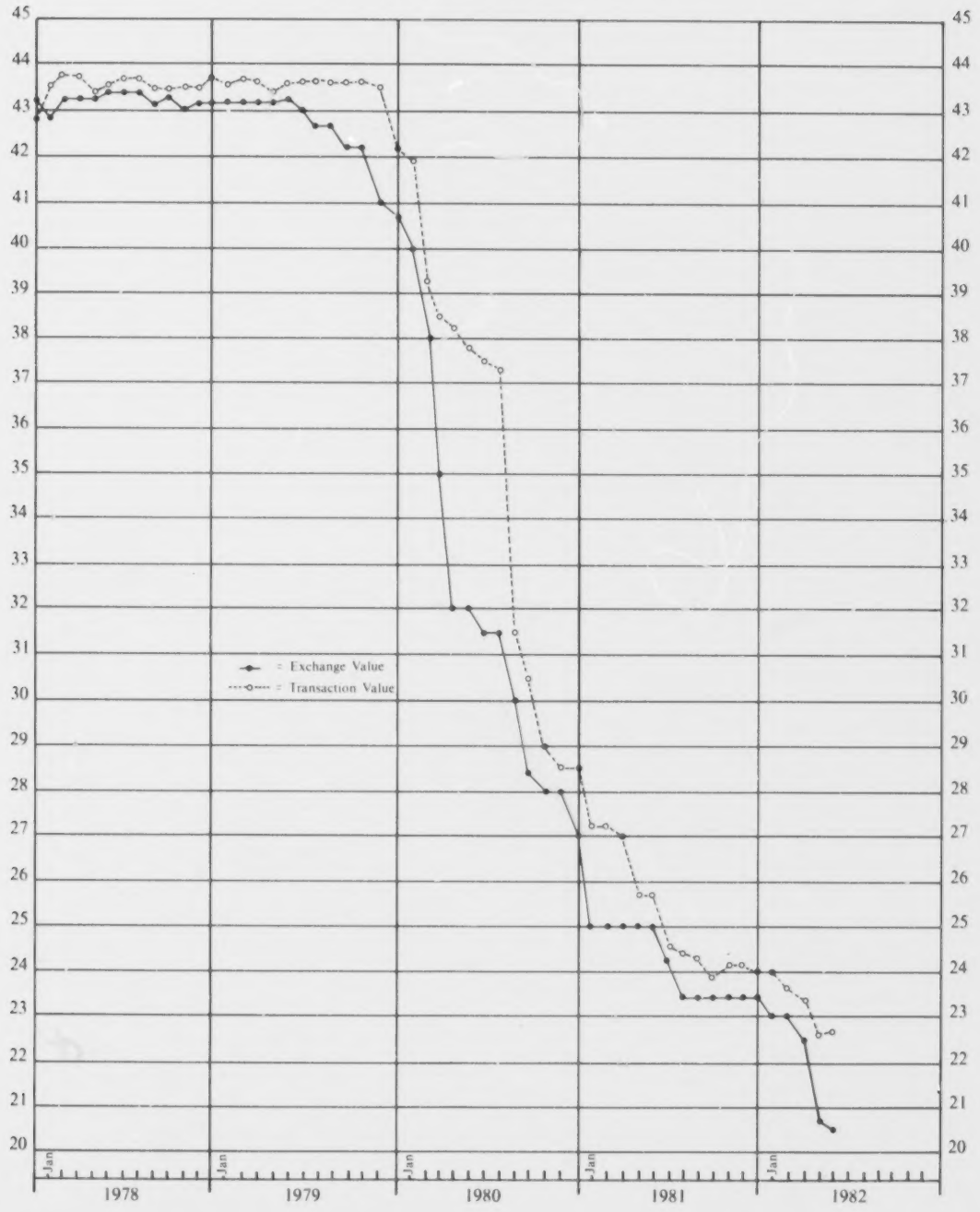
STATISTICAL DATA

EXCHANGE AND TRANSACTION VALUES
SINCE JANUARY 1978
Determined as of the last day of the month indicated



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STATISTICAL DATA

HISTORICAL EXCHANGE VALUES

Determined as of the last day of the month indicated (US Dollars/lb. U_3O_8)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1968	—	—	—	—	—	—	—	6.35	6.35	6.40	6.45	6.50
1969	—	6.35	6.10	6.10	6.25	6.25	6.20	6.20	6.15	6.15	6.15	6.20
1970	6.30	6.30	6.30	6.30	6.30	6.30	6.30	6.20	6.15	6.15	6.15	6.15
1971	6.20	6.20	6.20	6.20	6.15	6.05	6.00	5.95	5.95	5.95	5.95	5.95
1972	5.95	5.95	5.95	5.95	5.95	5.95	5.95	5.95	5.95	5.95	5.95	5.95
1973	5.95	6.00	6.10	6.20	6.45	6.50	6.50	6.50	6.50	6.50	6.75	7.00
1974	7.70	7.90	8.00	9.00	9.50	10.50	11.50	12.00	12.50	14.00	14.75	15.00
1975	16.00	16.00	18.00	20.00	21.00	23.00	24.70	26.00	26.00	28.50	30.00	35.00
1976	35.20	37.00	39.25	40.00	40.00	40.00	40.00	40.40	41.00	41.00	41.50	41.00
1977	41.35	41.50	41.60	41.60	42.00	42.25	42.25	42.25	42.40	42.75	43.20	43.20
1978	42.90	43.25	43.25	43.25	43.40	43.40	43.40	43.10	43.25	43.00	43.25	43.25
1979	43.25	43.25	43.25	43.25	43.25	43.00	42.70	42.70	42.20	42.20	41.00	40.75
1980	40.00	38.00	35.00	32.00	32.00	31.50	31.50	30.00	28.50	28.00	28.00	27.00
1981	25.00	25.00	25.00	25.00	25.00	24.25	23.50	23.50	23.50	23.50	23.50	23.50
1982	23.00	23.00	22.50	20.75	20.50							

HISTORICAL TRANSACTION VALUES

Determined as of the last day of the month indicated (US Dollars/lb. U_3O_8)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1976	—	—	—	—	39.60	39.70	39.70	40.40	40.30	40.60	40.70	40.70
1977	41.30	41.30	41.40	41.50	42.80	42.90	43.00	42.60	42.50	42.80	42.90	42.90
1978	43.10	43.30	43.70	43.60	43.60	43.20	43.30	43.40	43.40	43.60	43.40	43.70
1979	43.60	43.80	43.70	43.40	43.60	43.70	43.70	43.60	43.60	43.60	43.50	42.30
1980	42.00	39.30	38.60	38.40	37.90	37.60	37.30	31.60	30.60	29.00	28.70	27.70
1981	27.20	27.20	27.00	25.70	25.70	24.50	24.40	24.30	23.90	24.10	24.10	24.00
1982	24.00	23.70	23.40	22.60	22.70							

EXCHANGE VALUE EXPRESSED IN SELECTED PRODUCER & CONSUMER CURRENCIES[1]

Country	per lb. U_3O_8 in Concentrates	per kg U_3O_8 in Concentrates	per kg U in Concentrates
US (dollar)	20.50	45.19	53.30
France (franc)	125.08	275.75	325.17
FRG (mark)	47.92	105.64	124.58
Japan (yen)	4,972	10,962	12,926
Switzerland (franc)	40.72	89.76	105.85
UK (pound)	11.41	25.15	29.66
Australia (dollar)	19.50	42.99	50.69
Canada (dollar)	25.42	56.05	66.10
Niger, Gabon (CFA)	6,212	13,695	16,150
South Africa (rand)	22.10	48.71	57.44
Sweden (kroner)	119.95	264.45	311.85

[1]Calculated using currency exchange rates published in the Wall Street Journal on the last business day of the month.

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STATISTICAL DATA

CONVERSION VALUE $1.00/lb. U as UF_6
Determined as of May 31, 1982

Definition

The Conversion Value is Nuexco's judgment of the price at which spot and/or near term transactions for significant quantities of conversion services could be concluded in the secondary market as of the last day of the month.

Derivation

Nuexco bases the Conversion Value upon:
A. Data from recently completed transactions.
B. Data from pending transactions.
C. Firm bids to buy and firm offers to sell.
D. Prices purchasers have expressed a willingness to pay, but for which Nuexco is not aware of firm bids to buy, and prices sellers have expressed a willingness to accept, but for which Nuexco is not aware of firm offers to sell.

Comments

Nuexco does not consider the following in determining the Conversion Value:
A. The price of conversion services delivered or to be delivered under old contracts.
B. The price of conversion services delivered in connection with contract renegotiations or other than arm's length transactions.

LOAN USE CHARGE RATE[1] 6%
Determined as of May 31, 1982

Definition

The Loan Use Charge Rate is Nuexco's judgment of the annual interest rate at which uranium loans could be concluded as of the last day of the month.

Derivation

Nuexco bases the Loan Use Charge Rate upon:
A. Data from recently completed or pending loan transactions.
B. Rates included in firm proposals to borrow or lend.
C. Rates that potential borrowers and lenders have expressed as a willingness to pay or accept, but for which Nuexco is not aware of firm proposals.

[1]Monthly data for 1968 through 1981 appear on pages 32-34 of Report 162.

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STATISTICAL DATA

AUSTRALIAN GOVERNMENT STATISTICS

	Price Index of Materials Used in Manufacturing Industry—All Groups (Year 1968-69 = 100.0)[1]	Weighted Average Minimum Weekly Wage Rates—Adult Males Australia Mining and Quarrying (A$)[2]
Annual Avg. 1971[3]	101.5	65.95
Annual Avg. 1972[3]	105.6	71.26
Annual Avg. 1973[3]	124.4	78.96
Annual Avg. 1974[3]	141.9	108.07
Annual Avg. 1975[3]	150.4	132.55
Annual Avg. 1976[3]	168.4	160.93
Annual Avg. 1977[3]	192.0	179.03
Annual Avg. 1978[3]	198.5	190.04
Annual Avg. 1979	248.8	196.34
Annual Avg. 1980	321.8	218.00
Annual Avg. 1981	355.3R	237.27R
Dec 1980	351.7	222.41
Jan 1981	357.8	230.58
Feb 1981	356.6	230.41
Mar 1981	355.2	229.66
Apr 1981	354.6	229.38
May 1981	353.4	237.31
Jun 1981	360.4	237.93R
Jul 1981	356.9	237.86R
Aug 1981	359.9R	237.86R
Sep 1981	357.4R	237.82R
Oct 1981	351.6R	239.26R
Nov 1981	350.3R	241.13R
Dec 1981	348.9R	258.01R
Jan 1982	353.9P	259.76R
Feb 1982	355.8P	259.56P
Mar 1982	—	259.56P

P = Preliminary R = Revised since last month

[1]Australian Bureau of Statistics, Canberra: "Price Index of Materials Used in Manufacturing Industry" (Catalogue No. 6411.0), Table 3.
[2]Australian Bureau of Statistics, Canberra: "Wage Rates, Australia" (Catalogue No. 6312.0), Table 1. Figures for the latest fourteen months shown are subject to revision.
[3]Monthly data for 1970 through 1978 appear on pages 4.7 and 4.8 of Nuexco Report 138.

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STATISTICAL DATA

CANADIAN GOVERNMENT STATISTICS

	Industry Selling Price Index: Manufacturing (D 500000)[1] [2] (1971 = 100.0)	Wage-earner Data: Average Hourly Earnings (C$)[3] [4]		
		Metal Mining, including Milling (SIC 050-059)	Primary Metal Industries, non-ferrous (SIC 296-298)	Chemicals and Chemical Products (SIC 370-379)
Annual Avg. 1978	190.4	8.76	6.82	6.97
Annual Avg. 1979	217.9	9.60	7.35	7.67
Annual Avg. 1980	247.2	10.59	8.05	8.50
Annual Avg. 1981	—	12.02	9.03	9.53
Mar 1981	265.5	11.47	8.63	9.17
Apr 1981	267.9	11.73	8.76	9.33
May 1981	270.0	11.80R	8.90	9.49
Jun 1981	272.3	11.80R	9.16	9.57
Jul 1981	274.3	11.92R	9.20	9.62
Aug 1981	276.2R	11.83R	9.15	9.63
Sep 1981	276.9	12.47R	9.22	9.77
Oct 1981	279.3R	12.78R	9.35	9.91
Nov 1981	278.8R	12.89R	9.45	9.89
Dec 1981	279.9R	12.87R	9.42	10.03R
Jan 1982	281.7R	13.09P	9.53P	10.10R
Feb 1982	283.1R	13.24P	9.61P	10.19P
Mar 1982	284.0P	—	—	—
Apr 1982	286.5P	—	—	—

P = Preliminary R = Revised since last month

[1]Statistics Canada, Prices Division, Ottawa; "Industry Price Indexes" (Catalogue 62-011), Table 1. Indexes for the most recent six months shown are subject to revision.

[2]Monthly data for 1973 through 1978 appear on page 4.10 of Nuexco Report 138.

[3]Statistics Canada, Labour Division, Employment and Payrolls Section, Ottawa; "Employment, Earnings and Hours" (Catalogue 72-002), Table 2.

[4]Monthly data for 1977 and 1978 appear on page 4.11 of Nuexco Report 138.

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STATISTICAL DATA

REPUBLIC OF SOUTH AFRICA STATISTICS

	Average Declared Working Costs per Metric Ton of Gold Ore Milled (Rand)[1]	Consumer Price Index[2] (1975 = 100, except where otherwise indicated)	Wholesale Price Index All Groups (1975 = 100)	Total Employment in Mining and Quarrying (Code 35)[5]	Total Salaries and Wages in Mining and Quarrying (1,000 Rand) (Code 40)[5]
Annual Avg. 1971[3]	7.88	106.4[4]	59.1	652,294	415,956
Annual Avg. 1972[3]	8.79	113.3[4]	63.9	623,067	443,933
Annual Avg. 1973[3]	10.51	124.1[4]	72.3	684,743	572,133
Annual Avg. 1974[3]	13.18	138.5[4]	85.3	674,140	761,596
Annual Avg. 1975[3]	16.71	157.2[4]	100.0	639,473	1,003,617
Annual Avg. 1976[3]	19.30	174.7[4]	115.1	671,240	1,212,983
Annual Avg. 1977[3,6]	23.87	194.4[4]	130.0	712,006	1,420,670
Annual Avg. 1978[3,6]	27.14	137.2	142.7	664,571	1,537,169
Annual Avg. 1979[3,6]	30.18	155.3	164.5	692,209	1,830,632
Annual Avg. 1980[6]	35.53	176.7	192.1	714,379	2,279,615
Annual Avg. 1981	41.89	203.5	218.3	728,506	2,820,505
Nov 1980	—	187.8	205.6	716,797	208,345
Dec 1980	37.69	189.9	206.5	705,087	211,829
Jan 1981	—	191.0	207.2	729,575	219,969
Feb 1981	—	193.8	209.8	725,647	210,275
Mar 1981	39.26	195.2	209.9	705,010	210,151
Apr 1981	—	196.4	211.6	719,674	217,124
May 1981	—	197.7	213.2	725,869	219,880
Jun 1981	40.41	200.0	215.3	728,506	237,049
Jul 1981	—	204.6	218.4	735,839	249,080
Aug 1981	—	208.0	222.6	722,684	245,817
Sep 1981	43.28	211.6	224.6	724,604	251,502
Oct 1981	—	213.4	227.0	717,918	248,159
Nov 1981	—	214.8	229.4	720,255	253,044
Dec 1981	44.52	216.3	230.4	709,612	257,655
Jan 1982	—	217.6	233.1	—	—
Feb 1982	—	220.2	236.8	—	—
Mar 1982	45.49	225.2	—	—	—

[1]Chamber of Mines of South Africa, Johannesburg: "Analysis of Working Results," published quarterly.
[2]Republic of South Africa Department of Statistics, Pretoria: "Government Gazette: Consumer Price Index for Urban Areas."
[3]Historical data for the Average Declared Working Costs and Consumer Price Index 1970-1979 appear on page 4.9 of Nuexco Report 140.
[4]April 1970 = 100.00.
[5]Bulletin of Statistics, Department of Statistics, Pretoria.
[6]Historical data for Codes 35 and 40 1977-1980 appear on page 28 of Nuexco Report 157.

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STATISTICAL DATA

US GOVERNMENT STATISTICS

	Producer Price Index—Industrial Commodities (1967 = 100)[1]	Producer Price Index—All Commodities (1967 = 190)[1]	Consumer Price Index (1967 = 100)[2]	GNP Implicit Price Deflator (1972 = 100)[3]	Gross Average Hourly Earnings of Production or Non-supervisory Workers (US$)[4]			
					Metal Mining (SIC 10)	Primary Non-ferrous Metals (SIC 333)	Chemicals and Allied Products (SIC 28)	Electric and Electronic Equipment (SIC 36)
Annual Avg. 1971[5]	114.1	114.0	121.3	96.02	4.12	4.15	3.97	3.49
Annual Avg. 1972[5]	117.9	119.1	125.3	100.00	4.56	4.59	4.26	3.71
Annual Avg. 1973[5]	125.9	134.7	133.1	105.80	4.84	4.98	4.51	3.91
Annual Avg. 1974[5]	153.8	160.1	147.7	116.02	5.44	5.63	4.88	4.21
Annual Avg. 1975[5]	171.5	174.9	161.2	127.15	6.13	6.24	5.39	4.64
Annual Avg. 1976[5]	182.4	183.0	170.5	133.71	6.76	6.87	5.91	4.96
Annual Avg. 1977[5]	195.1	194.2	181.5	141.70	7.28	7.67	6.43	5.39
Annual Avg. 1978[5]	209.4	209.3	195.4	152.05	8.23	8.56	7.02	5.82
Annual Avg. 1979[5]	236.5	235.6	217.4	165.46	9.27	9.50	7.60	6.32
Annual Avg. 1980[5]	274.8	268.8	246.8	177.36	10.27	10.63	8.30	6.95
Annual Avg. 1981	304.1	293.4	272.4	193.71	11.57	11.97	9.12	7.65
Jun 1981	305.1	294.5	271.3	191.06	11.31	11.88	9.07	7.60
Jul 1981	306.2	296.0	274.4	—	11.61	12.19	9.16	7.69
Aug 1981	307.2	296.2	276.5	—	11.85	12.09	9.19	7.76
Sep 1981	307.4	295.7	279.3	195.61	12.11	12.68	9.38	7.79
Oct 1981	309.0	296.1	279.9	—	12.09	12.43	9.37	7.84
Nov 1981	309.3	295.9R	280.7	—	12.14	12.47	9.42	7.86
Dec 1981	310.0R	295.8R	281.5	200.10	12.09	12.44	9.52	7.93
Jan 1982	311.7P	298.2P	282.5	—	12.21	12.65	9.68	8.02
Feb 1982	311.4P	298.5P	283.4	—	12.23	12.59	9.68R	8.00
Mar 1982	311.0P	297.9P	283.1	201.84R	12.30P	12.67P	9.66R	8.06R
Apr 1982	309.9P	297.9P	284.3	—	—	—	9.79P	8.09P

P = Preliminary R = Revised since last month

[1]US Bureau of Labor Statistics, Washington, D.C.; "Producer Prices and Price Indexes," Table 6 (formerly "Wholesale Prices and Price Indexes"). Producer Price Indexes are revised four months after they are first released to reflect the availability of late reports and corrections by respondents.

[2]US Bureau of Labor Statistics, Washington, D.C.; Consumer Price Index for All Urban Consumers, US City Average, All Items.

[3]US Department of Commerce, Washington, D.C.; Bureau of Economic Analysis, National Income and Wealth Division; "Survey of Current Business," Table A. The GNP Implicit Price Deflator is published quarterly, and seasonally adjusted.

[4]US Bureau of Labor Statistics, Washington, D.C.; "Employment and Earnings," Table C-2. All data based on 1972 revision of SIC Manual. Data for 1970-1976 are adjusted to the March 1977 benchmark. Data for 1977-1978 are adjusted to the March 1979 benchmark. Data for January 1979 and beyond are adjusted to the March 1980 benchmark.

[5]Monthly data 1970-1978 for Producer Price Index-Industrial Commodities, Consumer Price Index, and Employment and Earnings SIC codes 10, 333, and 28, and quarterly data for GNP Implicit Price Deflator appear on pages 4.6-4.8 of Nuexco Report 139.
Monthly data 1977-1978 for Employment and Earnings SIC Codes 10, 333, and 28 appear on page 33 of Nuexco Report 147.
Monthly data 1970-1978 for Employment and Earnings SIC Code 36 appear on page 23 of Nuexco Report 154.
Monthly data 1979-1980 for Employment and Earnings, Revised Establishment Data, all listed codes, appear on page 22 of Nuexco Report 158.
Monthly data 1977-1980 for Producer Price Index-All Commodities, appear on page 21 of Nuexco Report 158.

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FIGURES OF THE MONTH

	This Month	Last Month	12 Months Ago
	(Referenced to May 31, 1982)		
Exchange Value[1]	20.50	20.75	25.00
Transaction Value[1]	22.70	22.60	25.70
Conversion Value[2]	1.00	1.20	1.15
Loan Use Charge Rate[3]	6%	6%	7%
Near-Term Uranium Supply[4]	15.2	13.0	7.7
Near-Term Uranium Demand[5]	1.6	1.4	1.8
Near-Term Supply-Demand Ratio	9.5	9.3	4.3
Optimum Tails Assay[6]	.318	.318	.281
Current Transactions[7]:			
Number of Transactions	2	3	3
Quantity of Material[8]	0.2-0.6	0.7-1.4	0.4-0.8

[1]US $ per pound U_3O_8 equivalent
[2]US $ per pound U as UF_6
[3]Percent per annum
[4]Active inquiries to sell, for delivery within 12 months after contract signing (millions of pounds U_3O_8)
[5]Active inquiries to purchase, for delivery within 12 months after contract signing (millions of pounds U_3O_8)
[6]Percent U_{235}
[7]Uranium transactions only; does not include loans or conversion transactions
[8]Millions of pounds U_3O_8, equivalent

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